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ABSTRACT

Two major objectives underlie the initiation of this project effort: (1) the creation of a meaningful, cooperative effort between the Kent County, Delaware Vocational Technical School District and the Milford School District for the purpose of expanding vocational education and (2) the establishment of a system to serve as a model for future expansion of vocational education in the State. Several cooperatively developed activities aided in the project's success. Some of the objectives realized were: (1) workshops for faculty, staff and teaching teams involving the enlistment of consultants, (2) the initiation of a career education curriculum and guidance program for grades K-12, (3) the design of an operational curriculum based on single and multi-clustered occupational models, (4) the employment of a full-time job placement coordinator and the establishment of a high school job placement and counseling office, (5) increased emphasis on career information and exploration in grades 5-8, (6) the establishment of career education resource centers in school libraries, (7) the implementation of summer career opportunities programs for teacher interns, and (8) continuous evaluation assessments. The project staff worked with 19 of the 26 school districts in Delaware on a cooperative basis. (SN)

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DELAWARE'S OCCUPATIONAL-VOCATIONAL EDUCATION MODEL

AN EXPERIMENT IN CAREER EDUCATION

SECOND INTERIM REPORT ON DELAWARE'S OCCUPATIONAL-VOCATIONAL EDUCATION MODEL, 906 LAKEVIEW AVE., MILFORD, DEL. 19963

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INTERIM REPORT

Project No. 0-361-0013
Grant No. OEG-0-71-0678(361)

AN OCCUPATIONAL VOCATIONAL EDUCATION MODEL FOR THE STATE OF DELAWARE

Exemplary Project in Vocational Education
Conducted Under
Part D of Public Law 90-576

Joseph L. English
Delaware State Board for Vocational Education
Project Office
906 Lakeview Avenue
Milford, Delaware 19963

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The project reported herein was performed pursuant to a contract with the Bureau of Adult, Vocational, and Technical Education, Office of Education, U.S. Department of Health, Education and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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I

SUMMARY OF REPORT

Period Covered:

October 1, 1971 - September 30, 1972

Goals And Objectives Of The Project

Two specific goals have been set for the project:

1. To create a meaningful, cooperative effort between the Kent County Vocational-Technical School District and the Milford School District for the purpose of expanding vocational education to meet the needs of all children.

2. To establish a system to serve as a model for future expansion of vocational education in Delaware.

Additionally, five specific objectives are listed:

1. Provisions for broad occupational orientation at the elementary and secondary school levels to increase student awareness concerning the career options open to them in the world of work.

2. Provisions for work experience, cooperative education and similar programs, making possible a wide variety of offerings in many occupational areas.

3. Provisions for students not previously enrolled in vocational programs to receive specific training in job entry skills just prior to the time they leave school.

4. Provisions for intensive occupational guidance and counseling during the last years of school and for initial placement of all students at the completion of their schooling.

5. A commitment from the districts to continue the successful elements of the project after the contract is terminated.

Procedures Followed

The project's planning phase was completed by September 30, 1972. A detailed operational description has been provided in the first Interim Report (ERIC Document No. VT 014 424, Ed 058 420).

Procedures used during the second year of operation included:

1. Faculty and staff workshops
2. Teaching team workshops (released time)
3. Small group planning sessions (released time)
4. Field trips to business and industrial sites (staff and students)
5. Consultants
6. Dissemination and public relations

7. County employment survey

8. Design and development of employment projection system

9. Totally integrated career guidance program

10. The world of people program (K-4)

11. Career development laboratories (5-6)

12. Expanded industrial arts and home economics program with career emphasis (5-8)

13. Completed career education center (9-12). The following occupational areas became operational on September 1, 1972: Hospitality, Food Service, Ornamental Horticulture, "Mr. Fix-It", General Contracting, and Auto Services.

14. Cooperation with Kent County Vocational-Technical Center

15. Development of an operational curriculum design system based on a single and multi-clustered occupational framework

16. Employment of a full time Job Placement Coordinator

17. Establishment of a High School Job Placement and Counseling Office

18. Increased emphasis on career information and exploration (5-8)

19. Establishment of Career Education Resource Centers in

school libraries

20. Teacher intern program for seniors

21. Work experience, cooperative work experience and cooperative work study programs

22. Summer career opportunities program

23. Internal monitoring

24. Internal and external evaluation

Procedures and programs listed above were developed to support specific project objectives. The reader is invited to refer to the body of this report for a detailed description of procedural methodology.

Results And Accomplishments

School administrators, counselors, teachers and parents continue to hold favorable attitudes toward the career education concept. Increased support has been noted from area businesses and industrial organizations.

Data indicated that the project has produced the following results: (1) student interest in job preparation has increased, (2) the number of dropouts decreased, (3) job placement service has provided additional jobs for students, (4) elementary career education program had positive response from children as well as parents, (5) expanded

opportunities for middle and high school students to explore occupations, and (6) staff and faculty have demonstrated an increasingly receptive attitude toward career education.

In another dimension, data indicated that the so-called "college bound" student is taking advantage of job placement services, exploration activities, and other opportunities provided by the project.

One gratifying result of the project has been state-wide funding of a Career Guidance and Placement Coordinator for each school district in Delaware.

Another exciting outcome has been the planned development of a proposal by Kent County Vocational-Technical School designed to establish a comprehensive career education visitation program for teachers and administrators in all districts that are sending students to the Center. The proposal will request funds to expand the successful visitation program designed by Delaware's Occupational-Vocational Model's staff and implemented in cooperation with Milford School District and Kent County Vocational-Technical School District. Five (5) school districts in Kent County will be offered an opportunity to participate in the visitation program.

The project staff has worked with nineteen (19) of the twenty-six (26) school districts in Delaware on a cooperative basis

by providing information, curriculum materials and general assistance for career education program planning.

Evaluation

Evaluation efforts during the second year of project operation were focused in two directions: first, internal product assessment; second, a summative program evaluation conducted by a private sub-contractor.

Basically, because it was not possible to structure a controlled situation, results obtained from internal evaluation must be considered from a "trend" perspective.

Generally, results were extremely positive in the affective domain and non-significant in the cognitive domain. Implications from these findings have wide spread research applications as well as practical significance.

Evaluation data provided by the sub-contractor yielded extremely positive results and indicated that all project objectives have been met.

Elementary career education and career guidance and placement components were noted as being most effective.

Conclusions and Recommendations

Staff efforts directed toward implementing the goals and

objectives of Delaware's Occupational-Vocational Education Model have produced significant results. However, these results must be viewed from within the total school-community environment,i.e., a normally distributed population would typically yield greater gains in relation to expended resources.

District personnel have contributed time and effort to the project and are to a large extent responsible for the amount of progress recorded thus far. However, greater effort must be directed toward coordination and supervision of teachers in relation to project objectives.

The following recommendations are offered for consideration:

1). Expansion of curriculum focused around the career cluster concept;

2). Begin immediately to plan for continuation of program elements;

3). Expand ninth and tenth grade exploratory programs,e.g., transportation, graphic communication, manufacturing; and

4). Increase dissemination efforts directed toward public understanding of career education.

II

BODY OF REPORT

Review Of Literature

Underlying the activities of DOVM is the basic philosophy that the individual, as he progresses through 12 years of schooling, should be presented with the various breadths and depths of the world of work so that he is exposed to a realistic picture of the world of work. Given knowledge of the world of work, the individual should be aware of the various opportunities and requirements of work so that he can plan and prepare for work entry. Concommitant with this planning is the development of interest and motivation in work, as well as positive attitudes towards work. Thus, the Model's emphasis is not so much on presentation of occupations, rather on the individual's gaining knowledge of the world of work and knowledge of himself (his interests, values, aptitudes, and personality) in order to fit into the world of work.

The philosophy of the DOVM project is based on a theoretical rationale provided by recent research in vocational development theory. Super and others (1963,1967) have investigated the exploratory and decision-making processes in vocational behavior in relation to trial and tentative choice before final vocational choice is

made. Tiedeman and O'Hara (1963) investigated the process of gaining a vocational identity and determined the correlates of the cognitive mechanisms of differentiation and integration set in motion through recognition of a problem or present unsatisfactory situation. Their study proposed an anticipatory stage of vocational development with substages of exploration, crystallization, choice, and clarification. Based on the theoretical formulations of developmental stages in vocational behavior, the DOVM has sought to provide a multi-level curriculum investigating the world of work. The program is designed to coincide with and provide for the developmental aspects of career development beginning with the lowest levels of vocational maturity.

Of particular importance are activities designed by the Project staff which focuses on individual personality development and associated trait factors. Research generated by Holland's (1966) model for vocational choice behavior tends to verify that the six category typology of psychosocial environments comprising personality play an important role in vocational choice behavior. In as much as self-concept and attitudes towards school and achievement play an integral role in personality development and vocational choice, the project has sought to include activities designed to foster personality development and positive attitudes. Holland and

Whitney (1968), using Holland's classification procedures, found occupational preferences conforming to theoretical expectations with a high degree of predictive efficiency. Jones (1965), investigating the occupational preferences of secondary school students, found "inner" and "outer" directed and person factors as components of occupational preference.

A component of the introduction of students to the world of work as the student progresses in school is the meaning of work to the individual in both its sociological and psychological aspects. Lodahl and Kejner (1965) have investigated job involvement as a function of a multidimensional scalable attitude affected by social-organizational conditions and learned value orientations. Various other studies (Friedlander, 1963) have identified social and technical environment, intrinsic self-actualizing work aspects and recognition through advancement as essential elements of job satisfaction. Other important aspects found related to satisfaction were freedom and intellectual stimulation (Geist, 1963). Activities prepared by DOVM emphasize those aspects of work and job satisfaction as the child moves through the developmental phases of vocational exploration and choice behavior.

On the basis of research relating personality, attitude, and interest to occupational choice, status, and performance (Super and

Crites, 1962), the DOVM project has attempted to incorporate more vocational guidance and counseling into on-going guidance programs for the students currently enrolled in the secondary school's programs. A Career Guidance and Placement Coordinator provided occupational information for those secondary students planning job-entry at the end of their high school education.

In summary, the basic career development point of view held by the project is one which stresses the importance of the self-concept. Under this emphasis, the project sees career development as a dynamic process in which self-concept integrates personality and need structures in a change and developmental process. Herr (1969) sees this model as emphasizing "the importance of progressive synthesis in role clarification and in choice options." Furthermore, Herr sees that under this model the individual

> ...learns through experience and by socialization what kind of person he is, that of which he is capable, what he values, his strengths and weaknesses, and the kinds of outlets which will be compatible with the pictures he has of himself. (It)..,provides for change in individual behavior, change in environmental expectations, and change in the interaction between the individual and the environment.

Goals And Objectives Of The Project

Two specific goals have been set for the project:

1. To create a meaningful, cooperative effort between the Kent County Vocational-Technical School District and the Milford School District for the purpose of expanding vocational education to meet the needs of all children.

2. To establish a system to serve as a model for future expansion of vocational education in Delaware.

Additionally, five specific objectives are listed:

1. Provisions for broad occupational orientation at the elementary and secondary school levels to increase student awareness concerning the career options open to them in the world of work.

2. Provisions for work experience, cooperative education and similar programs, making possible a wide variety of offerings in many occupational areas.

3. Provisions for students not previously enrolled in vocational programs to receive specific training in job entry skills just prior to the time they leave school.

4. Provisions for intensive occupational guidance and counseling during the last years of school and for initial placement of all students at the completion of their schooling.

5. A commitment from the districts to continue the successful elements of the project after the contract is terminated.

Description Of Population

Figures 1 and 2 describe the fourth (4th) and eighth (8th) grade populations respectively in the Milford School District.

The ability distribution of the 4th and 8th grade Milford populations appears to be positively skewed when compared to state norms. It is apparent that on the ability test, Milford students score lower than the state populations at these grade levels.

TABLE 1

Distribution of Students, Teachers, Counselors, Aides and Administrators by Organizational Unit

Organizational Unit	Student Pop.	Teacher	Counselor	Aide	Admin.
K-4	1,185	66	0	28	3
5-8	1,346	56	2	1	3
9-12	1,252	101	4	0	4
TOTAL	4,185	183	6	29	10

FIGURE 1

I. Test Results - Milford and Statewide Grade 4 Ability Tests

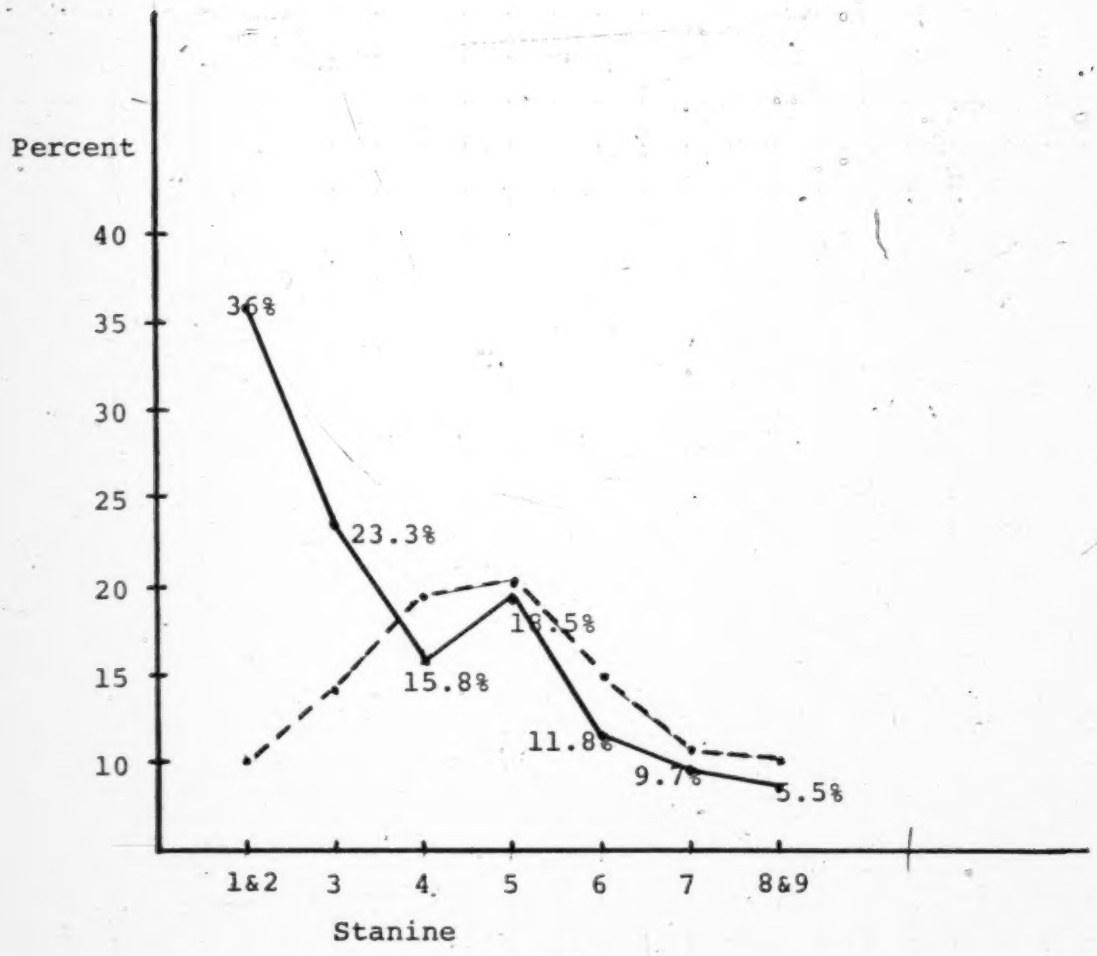


FIGURE 2

II. Test Results - Milford and Statewide Grade 8 Ability Tests

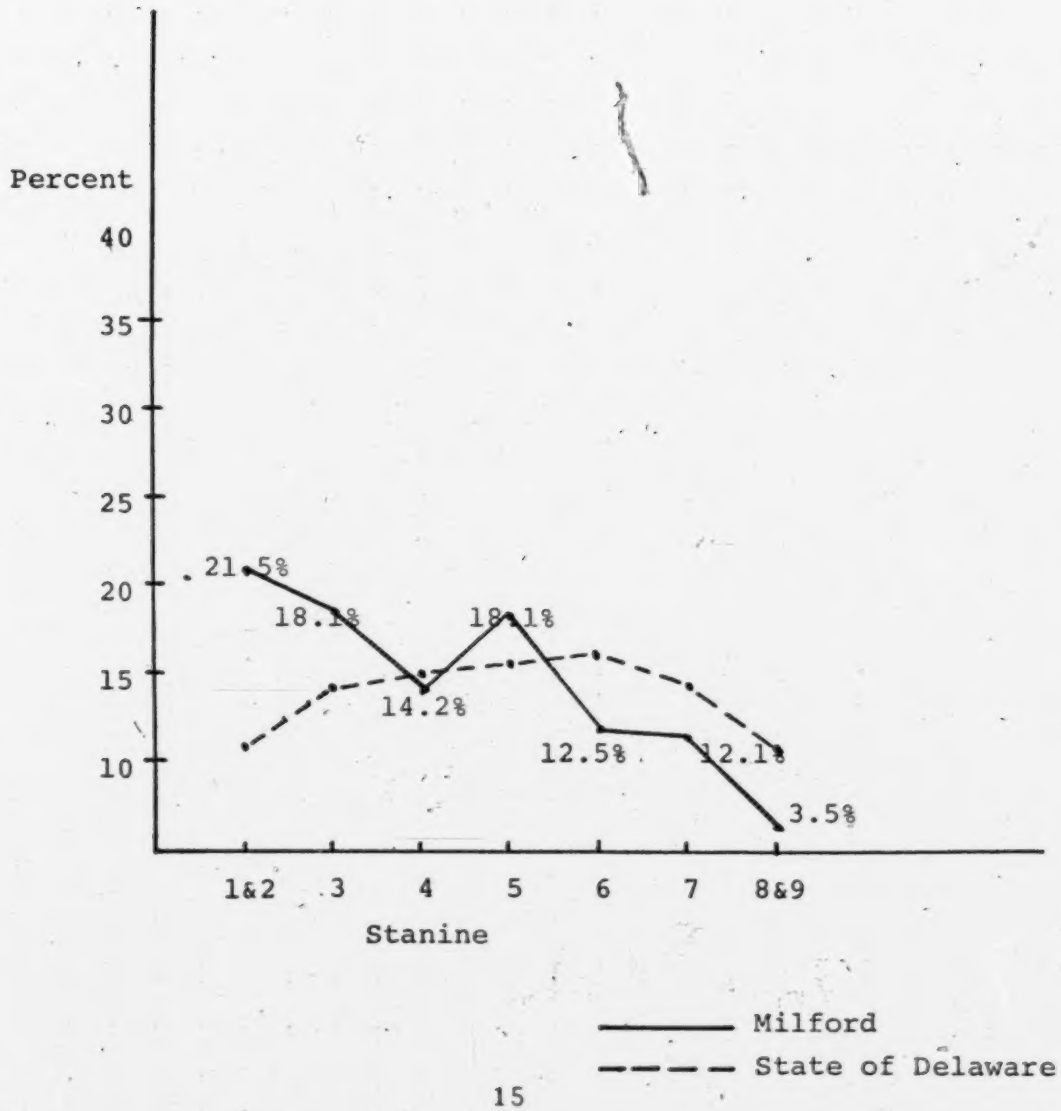


TABLE 2

Pupil Distribution By Color

Color	Percentage	Number
White	69	2,905
Black	30	1,238
Other	01	42
TOTAL	100	4,185

Operational Design

Figure 3 schematically describes the procedural design used for the implementation of Delaware's Occupational-Vocational Education Model. Note that the change strategy input is directly related to research and development, i.e., change strategies designed to solve specific problems are derived from educational research and experimentation.

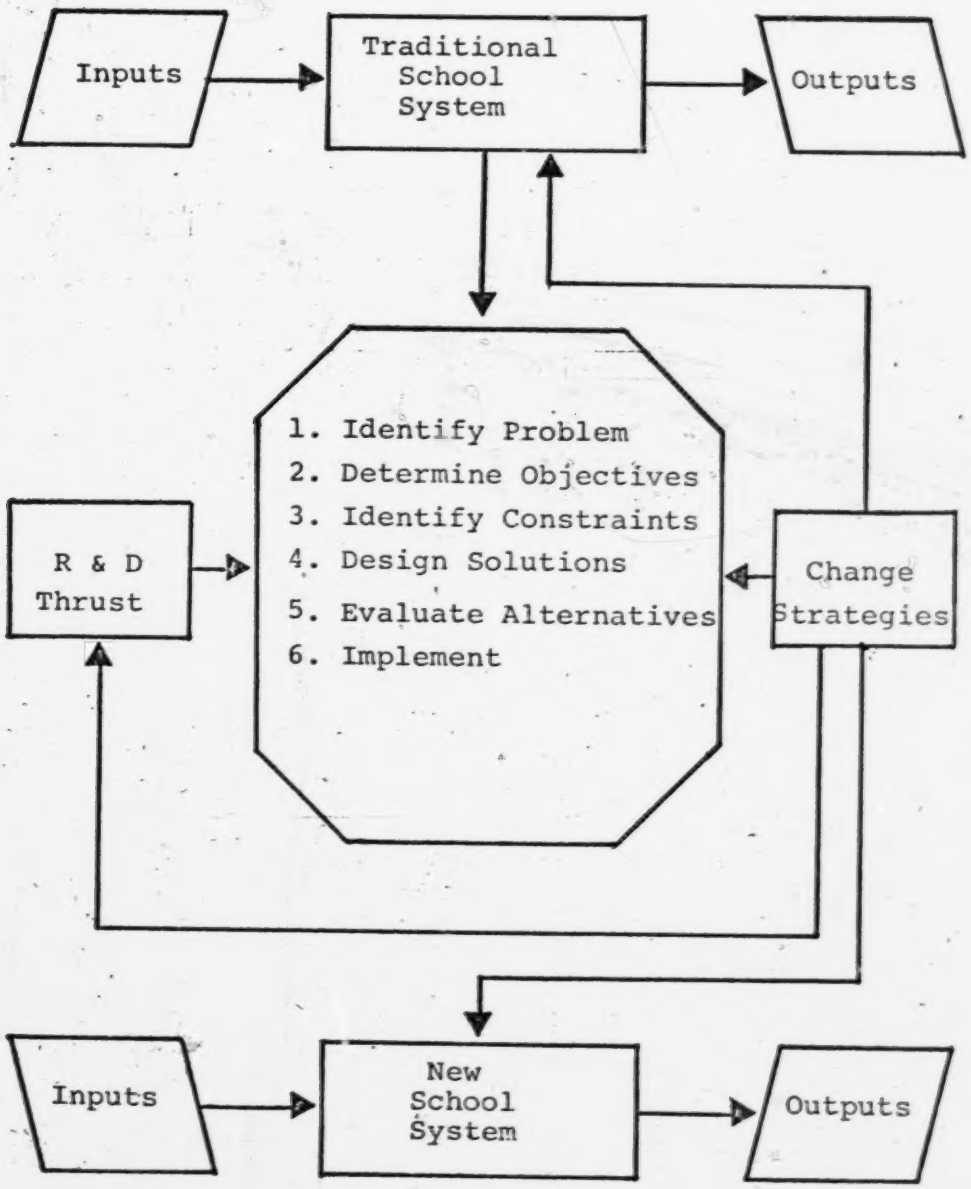
By superimposing a tri-level (K-4,5-8,9-12) structure over the procedural design, it was possible to develop program strategies for each specific project objective.

Figures 4,5,6,7, and 8 are included to illustrate a variety of programs developed through the application of systems analysis to educational program development.

FIGURE 3

DELAWARE'S OCCUPATIONAL-VOCATIONAL EDUCATION MODEL

A PROCEDURAL DESIGN



Adapted from David Bushnell's article, "A Systematic Strategy for School Renewal", Educational Technology, February, 1972, p. 30.

FIGURE 4

OBJECTIVE: Provisions for broad occupational orientation at the elementary and secondary levels to increase student awareness of the range of options open to them in the world of work.

PROGRAMS - ACTIVITIES:

ELEMENTARY LEVEL (K - 4)

OCCUPATIONAL ATTITUDES PROGRAM
Inservice Workshops
Multi-cluster Career Units
Technology for Children Program

MIDDLE SCHOOL LEVEL (5 - 8)

CAREER ORIENTATION PROGRAM
Expanded Practical Arts Offerings (7 - 8)
Home Economics & Industrial Arts, Manufacturing
Career Development Laboratory (5 - 6)
Career Film of the Month
Office Practice Cluster
Agri-Business Cluster - Greenhouse
Summer Opportunities Program - Kent Center

HIGH SCHOOL LEVEL (9 - 12)

CAREER EXPLORATION & PREPARATION PROGRAM
Student Intern Program
Library Aide Program
Career Film of the Month
Consumer Economics Course
American Vocational Guidance Week

DISTRICT-WIDE

CAREER CURRICULUM COUNCIL
Monthly Meeting

MILFORD TEACHER VISITATION TO KENT CENTER
Introduction to Vocational Education

FIELD TRIPS & RESOURCE PEOPLE
Suggested Field Trip Sites
Funds for Transportation
Arrange for Resource People

FIGURE 5

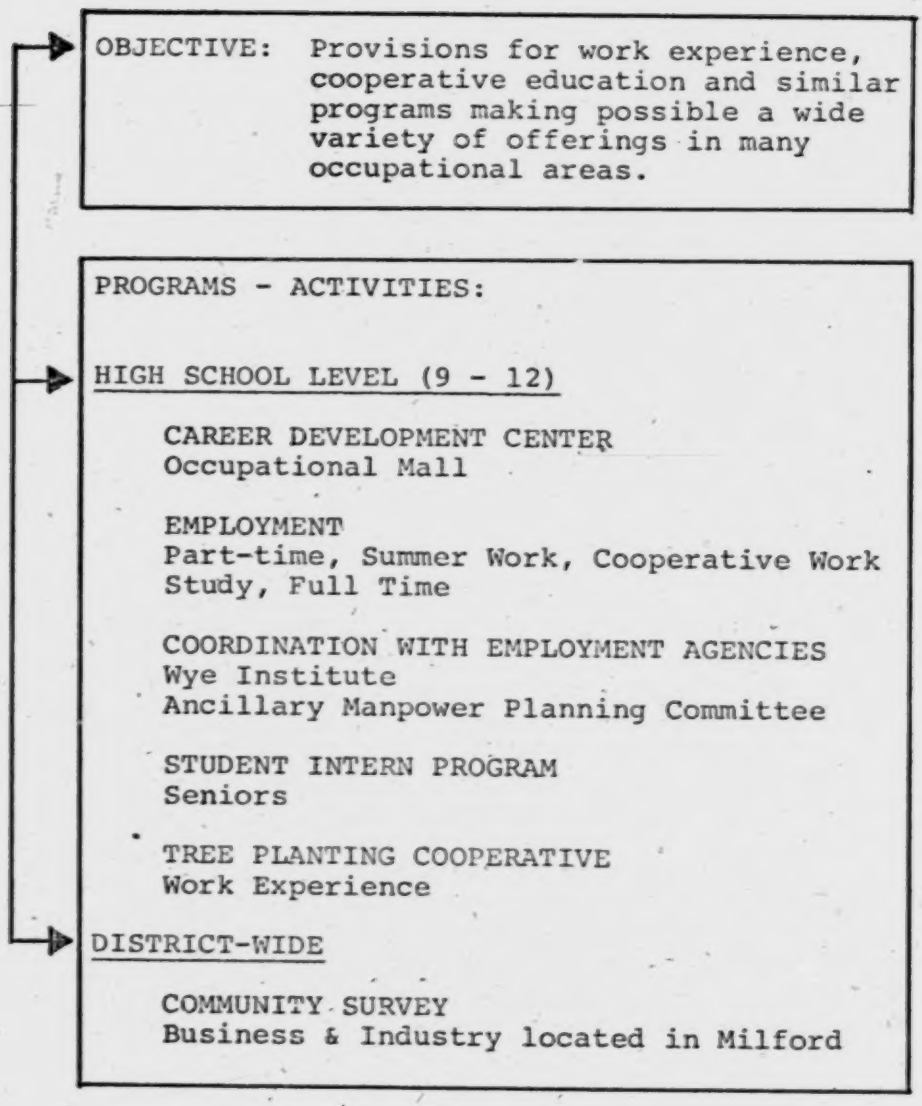

OBJECTIVE: Provisions for work experience, cooperative education and similar programs making possible a wide variety of offerings in many occupational areas.
PROGRAMS - ACTIVITIES:
HIGH SCHOOL LEVEL (9 - 12)
CAREER DEVELOPMENT CENTER
Occupational Mall
EMPLOYMENT
Part-time, Summer Work, Cooperative Work Study, Full Time
COORDINATION WITH EMPLOYMENT AGENCIES
Wye Institute
Ancillary Manpower Planning Committee
STUDENT INTERN PROGRAM
Seniors
TREE PLANTING COOPERATIVE
Work Experience
DISTRICT-WIDE
COMMUNITY SURVEY
Business & Industry located in Milford

FIGURE 6

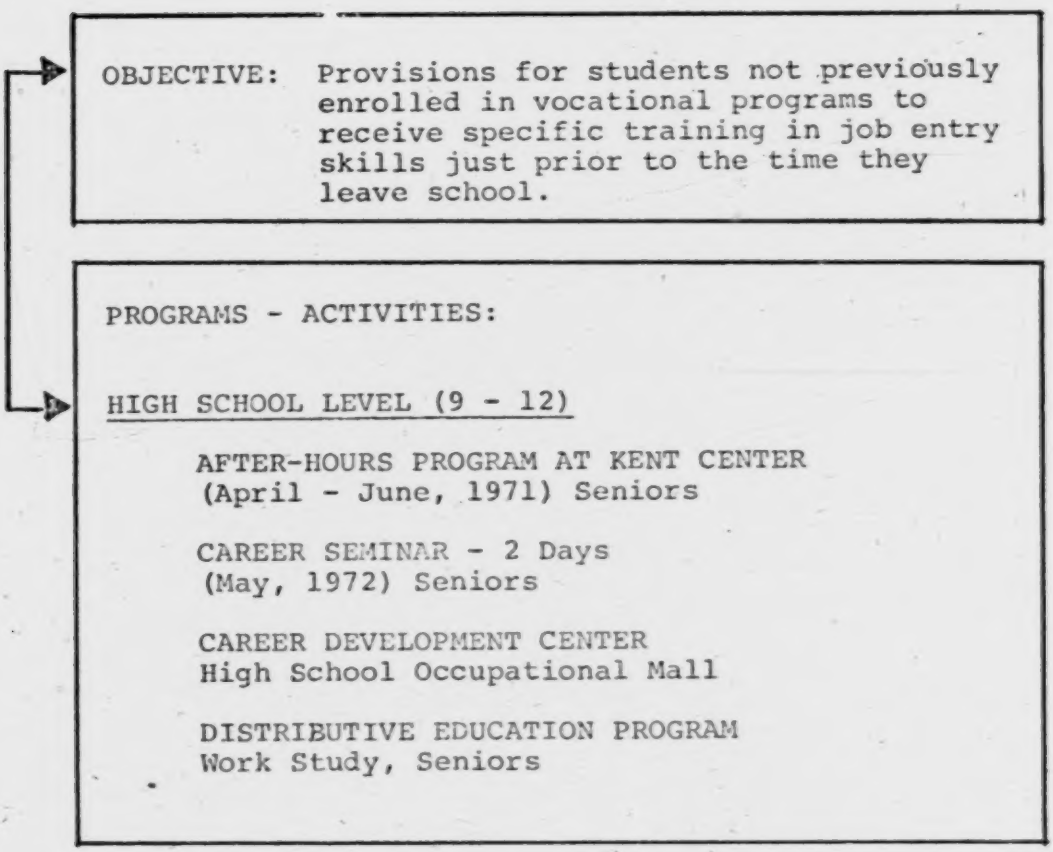

OBJECTIVE: Provisions for students not previously enrolled in vocational programs to receive specific training in job entry skills just prior to the time they leave school.
PROGRAMS - ACTIVITIES:
HIGH SCHOOL LEVEL (9 - 12)
AFTER-HOURS PROGRAM AT KENT CENTER
(April - June, 1971) Seniors
CAREER SEMINAR - 2 Days
(May, 1972) Seniors
CAREER DEVELOPMENT CENTER
High School Occupational Mall
DISTRIBUTIVE EDUCATION PROGRAM
Work Study, Seniors

FIGURE 7

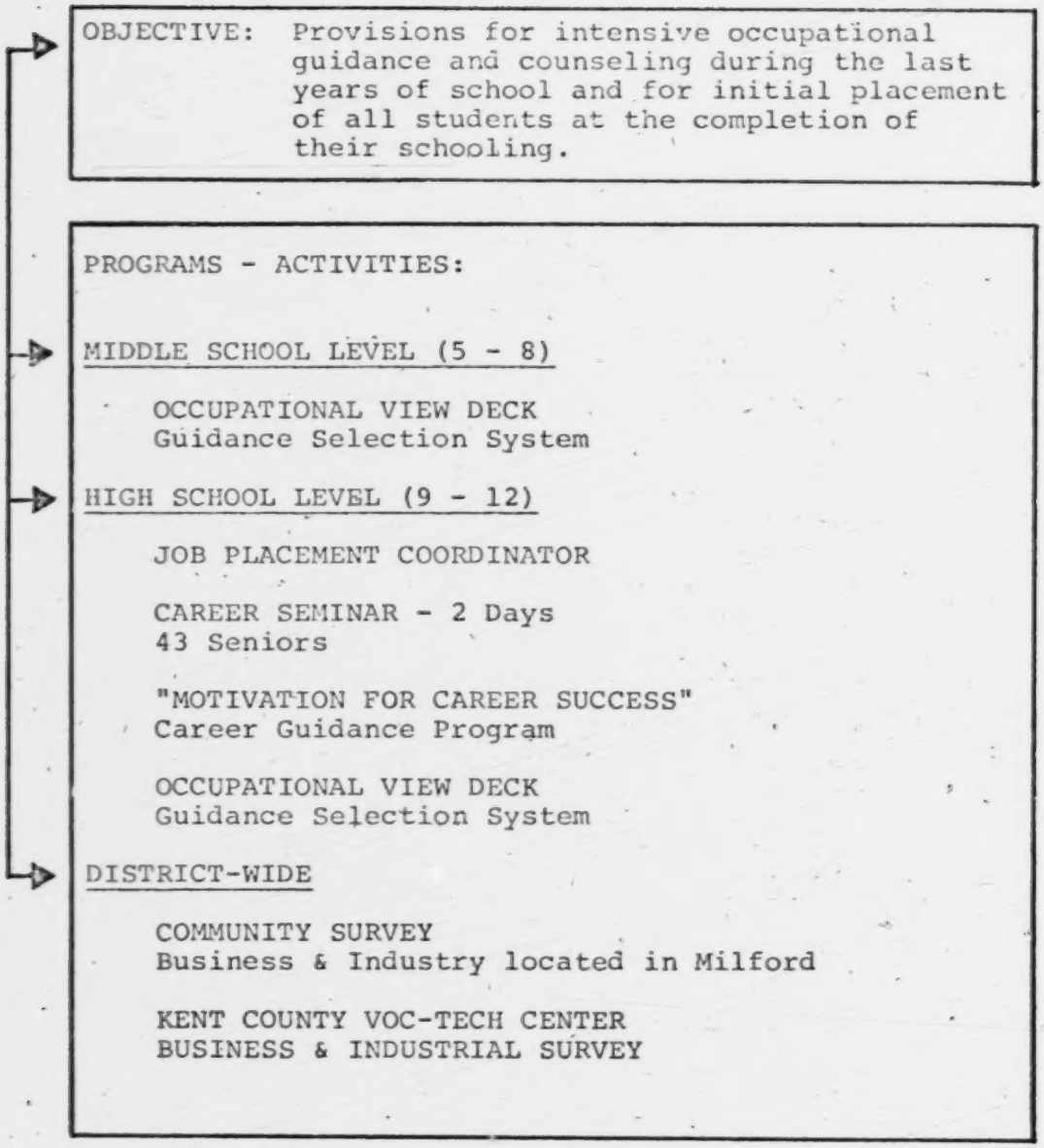
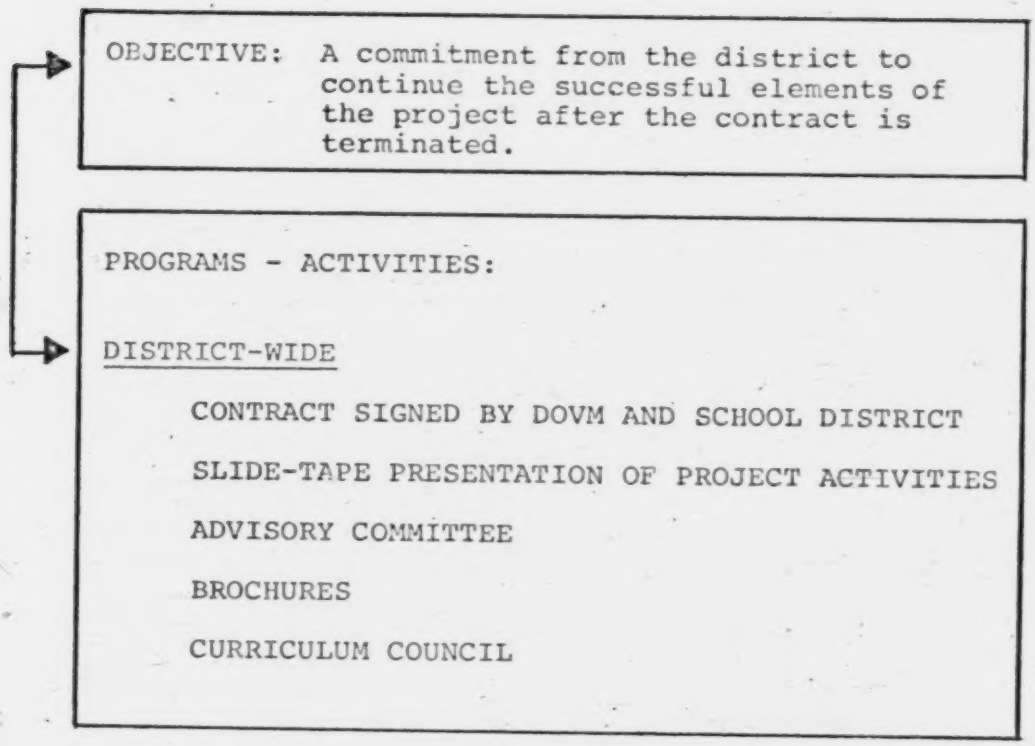

OBJECTIVE: Provisions for intensive occupational guidance and counseling during the last years of school and for initial placement of all students at the completion of their schooling.
PROGRAMS - ACTIVITIES:
MIDDLE SCHOOL LEVEL (5 - 8)
OCCUPATIONAL VIEW DECK
Guidance Selection System
HIGH SCHOOL LEVEL (9 - 12)
JOB PLACEMENT COORDINATOR
CAREER SEMINAR - 2 Days
43 Seniors
"MOTIVATION FOR CAREER SUCCESS"
Career Guidance Program
OCCUPATIONAL VIEW DECK
Guidance Selection System
DISTRICT-WIDE
COMMUNITY SURVEY
Business & Industry located in Milford
KENT COUNTY VOC-TECH CENTER
BUSINESS & INDUSTRIAL SURVEY

FIGURE 8


OBJECTIVE: A commitment from the district to continue the successful elements of the project after the contract is terminated.
PROGRAMS - ACTIVITIES:
DISTRICT-WIDE
CONTRACT SIGNED BY DOVM AND SCHOOL DISTRICT
SLIDE-TAPE PRESENTATION OF PROJECT ACTIVITIES
ADVISORY COMMITTEE
BROCHURES
CURRICULUM COUNCIL

Results And Accomplishments

Elementary Career Programs (K-4)

1. Classroom Activities - Career Learning Units have been developed by participating teachers. These units included topics such as School Workers, Health Workers, Garden, Home Building, Marine Life, Transportation, Manufacturing, and Classroom Store. Emphasis is on relating classroom subjects such as mathematics and language arts, to practical applications in a variety of occupational areas. The use of resource people and field trips help to bring the school and community together. A partial list of Career Development Learning Units has been made available to all elementary teachers and is included in Appendix A of this report.

2. Workshops - Elementary Career Education Workshop - The summer workshop provided teachers with information, skills and self-confidence necessary to implement career education concepts in their classrooms. The week-long workshop provided orientation for selected teachers. A total of 23 elementary teachers have completed the program.

A representative of the Opportunities Industrialization Center in Philadelphia was in attendance at the workshop. The workshop agenda is attached as Appendix B.

Table 3 indicates the number of elementary teachers by school location and grade level who are developing career education program components. Presently, approximately fifty percent of all elementary teachers are involved.

Middle School Career Programs (5-8)

1. Industrial Arts - The Industrial Arts program has been expanded to include, in addition to woodworking, areas of metalworking, plastics, electricity, and instruction in the careers associated with the manufacturing and construction clusters.

2. Home Economics - Home Economics programs in the middle school are the center of consumer and homemaking career clusters. These programs have been expanded to include, in addition to cooking and sewing, areas in home furnishing and child development.

3. Career Laboratory - A Career Laboratory has been developed to provide time, space, and materials to carry-out activities associated with career development in the fifth and sixth grades. Career aides have been employed to assist teams in planning and carrying-out career development activities. One career education project that has been developed includes components of a manufacturing company where students designed, manufactured, sold, and analyzed costs of a product. Another activity involving the Career

TABLE 3

DISTRIBUTION OF TEACHERS BY SCHOOL LOCATION AND GRADE LEVEL

ELEMENTARY SCHOOLS

1971 - 1972

SCHOOL	NO. OF TEACHERS	GRADE LEVEL						
		Sp. Ed.	Music	K	1	2	3	4
BANNEKER	9		1			2	3	3
LULU ROSS	9	EMR-1		1	1	1	2	3
MORRIS	3	LD-1		1				1
WEST	2				1			1
TOTAL	23	2	1	2	2	3	5	8

EMR - Emotionally Mentally Retarded

LD -- Learning Disabilities

Laboratory focused on a variety of careers associated with the development of a park on the banks of the Mispillion River.

4. Office Practice - To provide an experience in the business and office cluster in the middle school, an office practice elective has been established. The office practice elective includes typing, clerical duties and associated skills offered to interested students during the middle school elective period.

Table 4 shows the distribution of Middle School teachers who are actively developing career education program components.

High School Career Programs (9-12)

1. Career Center - The Diversified Occupations Program (Career Development Center) is designed to provide entry-level skills to those students who will be going directly to work at the termination of their schooling. The areas of instruction are: auto services, horticulture, general contracting, hospitality, food service, and appliance repair. This program now involves over 200 high school students.

2. Consumer Economics - The Consumer Economics course was designed to provide seniors with practical information and experience in the area of consumer buying, rent, credit, insurance, income

TABLE 4

DISTRIBUTION OF TEACHERS BY GRADE LEVEL
AND SUBJECT AREA SPECIALTY

MILFORD MIDDLE SCHOOL
1971 - 1972

NO. TEACHERS	GRADE LEVEL
1	EMR
2	ART
1	MUSIC
3	PHYSICAL EDUCATION
2	INDUSTRIAL ARTS
2	HOMEMAKING
10	LEVEL 5
10	LEVEL 6
2	LEVEL 7
3	LEVEL 8
2	GUIDANCE COUNSELOR
1	LIBRARIAN
TOTAL 39	

*EMR = Emotionally Mentally Retarded

tax, and occupational planning.

3. Work Experience Programs - Students involved in specific vocational programs, such as business, distributive education, and diversified occupations, are given the opportunity to work at various jobs during the school day.

4. Student Intern Program - The Student Intern Program is open to seniors interested in teaching or child care and is designed to give them experience with youngsters in elementary schools. Students attend high school in the morning and travel to designated elementary schools in the afternoon where they are assigned to work with an elementary teacher. Interns are involved in activities such as small group instruction, reading skill practice, and assisting students in individual and group projects. Activities of this nature provide student interns with experiences in the public services career cluster. Additional material explaining the Student Teaching Intern Course, selection procedures, transportation, attendance, and evaluation is attached in Appendix C.

5. Job Placement Program - The job placement effort in Milford High School is designed to locate part-time and full-time employment for those students desiring employment. A full-time Job Placement Coordinator supervises the program. Additionally, the Coordinator surveyed the community, contacted potential employers,

and devised a system to assist prospective employees in locating suitable jobs. Specific details concerning job placement and counseling activities are located in Appendix D of this report.

A distribution of high school teachers by subject area who have developed career education components is shown in Table 5.

Kent County Vocational-Technical Center Programs

1. Teachers Visiting Kent Center - Substitutes were provided to free Milford School District teachers from their regular teaching duties to attend a one-day orientation visit to the Vocational Center. These teachers toured the Center and were provided with an explanation of the Center's program. This orientation was designed to make teachers aware of the myriad of opportunities available in a modern vocational education facility.

2. Milford Students Attending the Center - As a result of the Visitation Program, teachers, counselors and administrators gained an insightful understanding of the purpose and scope of secondary vocational education. More positive attitudes toward vocational and career education are reflected by the fact that Kent Center's enrollment from Milford High School increased from 5 percent in 1970 to 14.5 percent in 1972 (Table 6).

TABLE 5

DISTRIBUTION OF TEACHERS BY SUBJECT AREA SPECIALTY

MILFORD HIGH SCHOOL
1971 - 1972

SUBJECT	NO. TEACHERS
BUSINESS ED.	1
MATH	2
ENGLISH	3
HOME ECONOMICS	1
EARTH SCIENCE	1
INDUSTRIAL ARTS	1
DISTRIBUTIVE ED. & HOSPITALITY	1
TOTAL	10

TABLE 6

NUMBER AND PERCENTAGE OF MILFORD HIGH SCHOOL STUDENTS
ATTENDING COUNTY AVTS'S

School Year	M.H.S. population 9-12	Kent County AVTS		Sussex County AVTS		Totals by year	
		No.	%	No.	%	No.	%
'70-'71	1163	62	5	74	6	136	11
'71-'72	1153	130	11	60	5	190	16
'72-'73 *	1240	180	14.5	101	8	201	22.5

* Projected from AVTS records

District-Wide Activities

1. Field Trips and Resource People - The project has increased the utilization of field trips and resource people coming into classrooms. The project has provided funds for transportation and substitute teachers in order to release participating teachers for community-centered field trips.

2. Curriculum Council - The Director of Instruction, Assistant Principals of the High School and Middle School, Elementary School Principals, and the Curriculum Coordinator are involved. The Curriculum Council is designed to coordinate curriculum activities at all levels within the Milford School District. The Council meets once a month under the direction of the Director of Instruction and all programs are discussed to insure correlation between schools.

3. Career Guidance Program - The project has increased emphasis on vocational awareness and career guidance in the school system. Funds have been provided for guidance materials that emphasize the concepts of career development. Occupational View-Deck materials have had increased use in the high school and middle school. In addition, a new package of guidance materials entitled Motivation For Career Success has been made available to high school counselors.

4. Summer Opportunities Program - The program is a five-week multi-clustered career exploration activity designed for students to explore various occupational areas at Kent Center. Examples of these occupational areas include: Auto Mechanics, Cosmetology, Photography, and Data Processing. Many students in the Milford School District have taken advantage of this program.

5. Career Education Week - Career Education Week focused on occupational awareness. A career fair, poster contests, resource people, films, skits, and field trips were used to convey the idea that career decisions are important and that students have a choice in determining their career.

6. Inter-Agency Coordination - The project staff communicates with a number of other agencies involved in employment, manpower and training. The Job Placement Coordinator periodically attends meetings and conferences dealing with program development at local, state, and national levels. The Project Director is also in contact with leaders in education and industry to insure that project activities are correlated with other programs.

7. Advisory Committee - This committee meets regularly to be advised of the project's activities and to provide recommendations and guidelines for overall policy and conduct of the project.

Dissemination

1. Tape/Slide Presentation - A tape/slide presentation has been developed to explain the rationale, goals, objectives and procedures connected with the development of Delaware's Occupational Vocational Education Model. Slides were taken of activities within the schools and later synchronized with a tape recording. By combining media, it was possible to produce a lucid explanation concerning the project's major thrust -- career education.

2. Brochures - Two brochures have been produced: one describes the Project's scope, while the other focuses on career education at the elementary level. These brochures have been widely distributed to parents, students and professionals interested in the project.

3. Overhead Transparencies - A presentation has been developed using overhead transparencies to explain the career development process to those individuals not familiar with it. This presentation is designed primarily for teachers and other educators.

4. Radio - The local radio station has aired several programs clarifying the purpose and activities of the Model project. Job placement services have been advertised via spot radio announcements.

5. Newspaper - The local newspaper has printed several articles concerning the Model. Paid advertisements have also been run to promote job placement efforts of the Model.

6. State and National - Over eighty (80) written requests for project information have been received from schools, colleges, universities, and private institutions representing virtually every state in the nation. One hundred and twenty-six (126) quarterly and interim reports have been distributed in Delaware.

Additionally, the Project Director has been asked on numerous occasions to present Delaware's Occupational Vocational Education Model to local, state, and national conferences concerned with the theme of career education.

Evaluation

Bivens and Associates, Inc., Dover, Delaware was awarded a contract to evaluate DOVM's second year of operation. Basically, findings indicated that all project objectives had been met. However, the elementary programs received significant praise from evaluators in terms of meeting stated objectives.

Appendix E contains the evaluation documents produced by the external evaluation contractor, Bivens and Associates, Inc., Dover, Delaware.

In addition to external evaluation described above, the Project's Research Assistant, Mr. Jay Price, designed a formative evaluation to monitor internal components of elementary and middle school career education programs.

Appendix F contains an internal evaluation report for the elementary (K-4) T4C Career Education Program. Part II of the report covers the evaluation of middle school Career Education Programs (5-8). Data gathering instrumentation is appended to the evaluation report. These reports are recommended to individuals who are interested in monitoring developmental career education components.

Conclusions; Implications; Recommendations

It is apparent that Project goals and objectives have been met. Data indicated that a wide variety of innovative techniques were used to implement each of the Project's objectives.

An increasing number of school districts in Delaware are modeling their occupational-vocational (career education) programs from designs and organizational concepts developed by DOVM's staff during the past two years. Much of this success has been due to the excellent rapport and cooperation between Project staff, district personnel and the State Department of Public Instruction's

Vocational Division.

Although elementary and middle school programs continue to develop, it is doubtful that high school teachers are willing to make significant moves toward the total implementation of career education concepts.

It has become clear that a shift in emphasis toward an employer-centered model is required if meaningful results are to be obtained at the high school level. Although this model is not presently defined in specific terms, it is obvious that students in the eleventh and twelfth grades should spend at least one-half of their school day engaged in meaningful educational experiences outside school.

Data generated by the Project indicated that several specific recommendations are in order:

1). Milford School District must take immediate steps to locate additional funding for continuation of career education in the district;

2). If career education is to continue developmentally in Milford, a full-time high level administrative position must be created within the district's administrative structure;

3). DOVM must increase it's dissemination efforts in the Milford School District. Local residents are not aware of the

project nor do they seem concerned that their school system is charting a new education course that will essentially benefit the total community.

Friedlander, Frank. "Underlying Sources of Job Satisfaction". Journal of Applied Psychology 47:246-50; August, 1963.

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Herr, Edwin L. "Unifying an Entire System Of Education Around A Career Development Theme", 1969, ED-045-856, VT-008-896.

Holland, John L. The Psychology of Vocational Choice. Waltham, Mass., 1966.

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Jones, Kenneth J. "Occupational Preference and Social Orientation", Personnel and Guidance Journal 43:574-79; February, 1965.

Lodahl, Thomas M., and Kejner, Mathilde. "The Definition and Measurement of Job Involvement", Journal of Applied Psychology 49:24-33; February, 1965.

Super, Donald E., and Others. Career Development: Self-Concept Theory. Princeton, N.J.: College Entrance Examination Board, 1963.

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Tiedeman, David V., and O'Hara, Robert P. Career Development: Choice and Adjustment. New York: College Entrance Examination Board, 1963.

APPENDIX A

CAREER DEVELOPMENT LEARNING UNITS

INTRODUCTION

The Career Development Learning Units were produced using the triad concept of school, teacher, and community. The units were developed and tested by classroom teachers in the Milford School District. They are intended to serve as guides and examples for teachers interested in developing career education units. The indicated grade level is approximate and the units can be modified for use at other grade levels. The units attempt to relate classroom experiences with situations existing in the world of work. The result is to make school activities meaningful. The career cluster concept is used to increase student awareness of the wide variety of career opportunities available.

BUSINESS AND OFFICE

Unit	Grade Level
Vocational Center Visit	2
Candlemaking	4
Classroom Store	4

MARKETING AND DISTRIBUTION

Wholesaling and Retailing	4
Consumer Buying	4

MARKETING AND DISTRIBUTION(CONT.)

Unit	Grade Level
Candlemaking	4
Classroom Store	4

COMMUNICATIONS AND MEDIA

Peter and The Wolf	1
What Is Time?	2
Vocational Center Visit	2
Getting A Job	4
Candlemaking	4

CONSTRUCTION

Peter and The Wolf	1
Vocational Center Visit	2
Home Building	3
Abacus	3
Classroom Store	4
Candlemaking	4

MANUFACTURING

Costumes	1
Hat Construction	2
What Is Time?	2
Clothing - Doll Clothes	2
Abacus	3
Candlemaking	4

TRANSPORTATION

Land Transportation	2
Vocational Center Visit	2
Candlemaking	4

AGRI-BUSINESS AND NATURAL RESOURCES

Garden	1

AGRI-BUSINESS AND NATURAL RESOURCES (CONT.)

Unit	Grade Level
Vocational Center Visit	2
Growing Plants From Seeds	3

MARINE SCIENCE

Marine Life	3
Living Things At The Seashore	4

ENVIRONMENTAL CONTROL

Land Pollution	2
Vocational Center Visit	2
Growing Plants From Seeds	3

PUBLIC SERVICES

School Workers	K
Health Workers	K
Land Pollution	2
Getting A Job	4
Candlemaking	4

HEALTH

Health Workers	K
Vocational Center Visit	2
Drug Use And Abuse	4
Candlemaking	4

HOSPITALITY AND RECREATION

Candlemaking	4

PERSONAL SERVICES

Vocational Center Visit	2

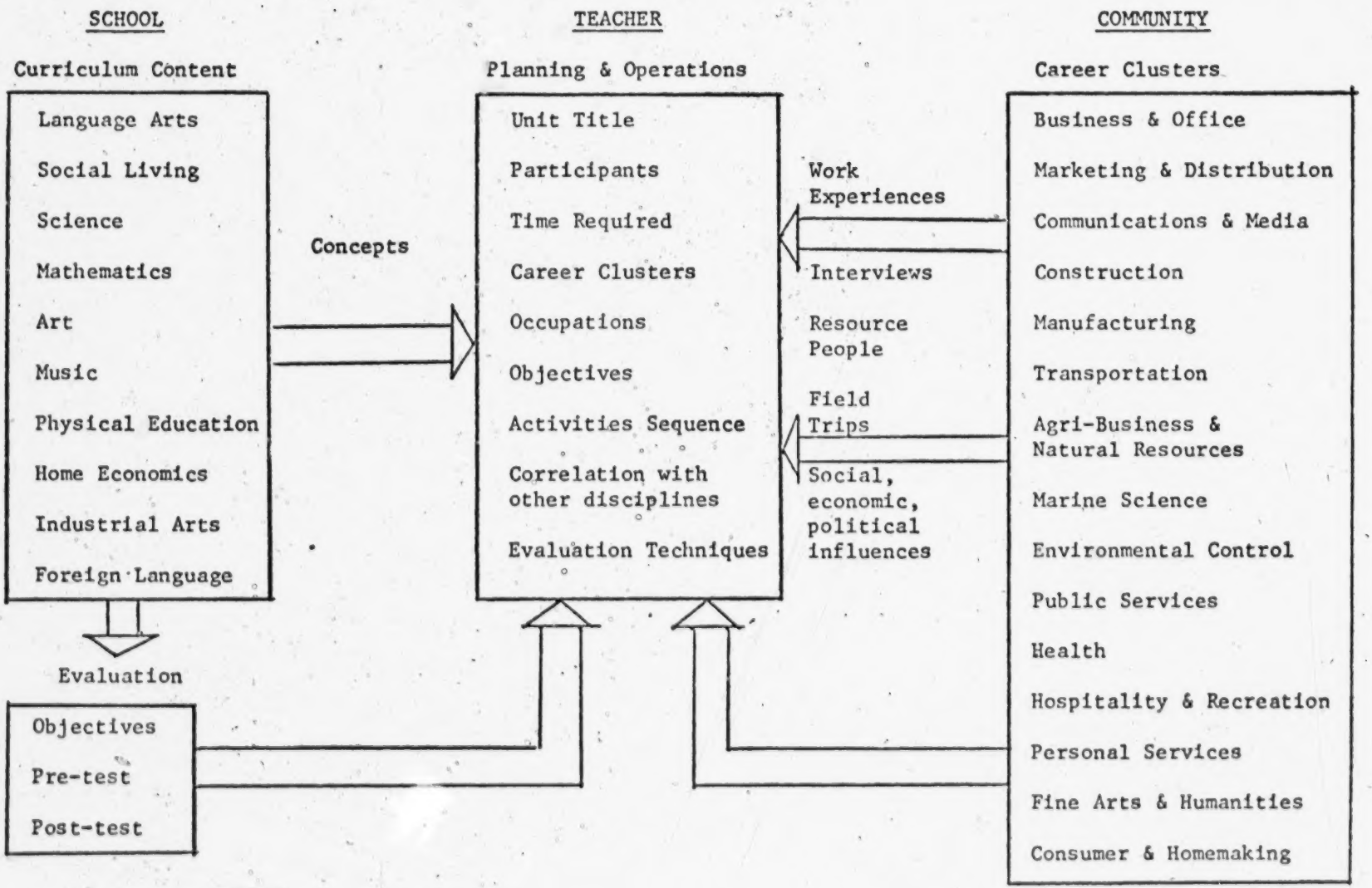
FINE ARTS AND HUMANITIES

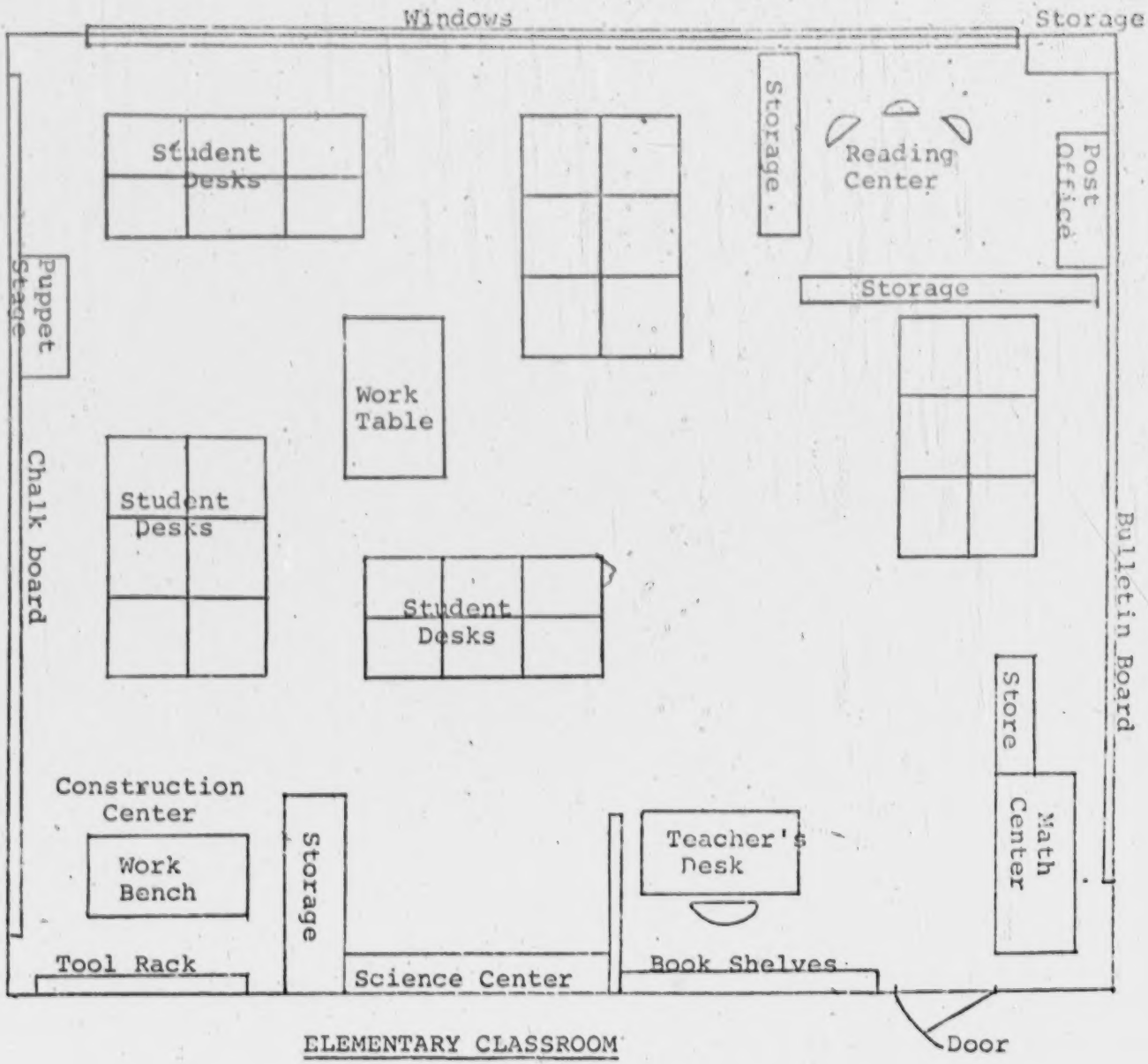
Unit	Grade Level
Peter And The Wolf	1
Costumes	1
Candlemaking	4

CONSUMER AND HOMEMAKING

Mother's Day Project	1
Clothing - Doll Clothes	2
Vocational Center Visit	2
Consumer Buying	4
Candlemaking	4

CAREER DEVELOPMENT LEARNING UNIT





ELEMENTARY CLASSROOM

CAREER DEVELOPMENT LEARNING UNIT

UNIT TITLE: School Workers

PARTICIPANTS: Kindergarten children, teacher, aide, school workers.

TIME REQUIRED: 15 hours during last 3 weeks of school year.

CAREER CLUSTERS: Public Services

OBJECTIVES:

Introduction for 5 year olds to people who work in the school and what their specific jobs are. Unit given to prepare students for full day of school starting in the fall.

1. The student will be able to tell the name of each of the workers discussed in the unit.

   Workers:

   Teacher
   Principal
   Secretary
   Nurse
   Bus Driver
   Librarian
   Custodian
   Cafeteria Workers
   Student

2. The student will be able to name one task of each of the workers discussed in the unit.

3. The student will participate in activities designed to foster a positive attitude toward school.

ACTIVITIES SEQUENCE:

1. Each worker will speak to the class in the classroom, speaking on their specific jobs.

2. The class will visit each of the workers and see the part of the school in which they work.

3. Each child will draw a picture of each worker.

4. Each child will relate a dictated story to the teacher about each of the workers. This will be put together with No. 3 to form a notebook.

5. The librarian will read a story to the children when they visit the library.

6. The children will eat lunch in the cafeteria. They will be prepared for this by a discussion and role playing of what is done by moving through a cafeteria line.

CORRELATION WITH OTHER DISCIPLINES:

Language Arts

Taking dictated stories about each of the workers.

Vocabulary building.

Develop skit using puppets and role playing.

Social Living

Necessity of cooperating with others.

Students will be assigned tasks or jobs with reward for satisfactory performance.

Mathematics

Collecting money for lunch.

Art

Drawing pictures of each of the school workers.

Combine pictures and stories to form notebook - decorate cover.

Make puppets of school workers.

EVALUATION TECHNIQUES

Individual student interviews will be used to determine attitude. Teacher will hold up picture of each worker and student will name the worker and his job task.

APPENDIX B

CAREER WORKSHOP - ELEMENTARY

DELAWARE'S OCCUPATIONAL - VOCATIONAL MODEL
CAREER WORKSHOP - ELEMENTARY

August 28 - September 1
Room 112-113 Banneker School

MON.	8:00 A.M.	Coffee, registration, welcome Film - "Career Education"
	9:00 A.M.	Tape-slide presentation - DOVM Workshop objectives
	10:00 A.M.	Demonstration of workbench and hand tools
	11:00 A.M.	Selection of woodworking project to practice use of tools and materials
TUES.	8:00 A.M.	Teaching Unit Development - modules, episodes. Participants select a topic to develop into a unit.
	9:00 A.M.	Film - "Learning for Living in a Technological World"
	10:00 A.M.	Cardboard Carpentry demonstration
	11:00 A.M.	Electricity demonstration - kits, extension cord
WED.	8:00 A.M.	Review teaching units
	9:00 A.M.	Film - "How to Start Construction in Elementary Classroom"
	10:00 A.M.	Making slides, movies, tape recordings
	11:00 A.M.	Printing - silk screen and block

THURS.	8:00 A.M.	Examples of restructuring academic subjects around career development
	9:00 A.M.	Film - "How to convert Elementary Classroom to an Industrial Arts Laboratory"
	10:00 A.M.	Continue activities in woodworking, electricity, printing
	11:00 A.M.	Compile material requisitions - explanation of ordering procedure
FRI.	8:00 A.M.	Review completed teaching units
	9:00 A.M.	Explain monthly report forms
	10:00 A.M.	Distribute community resource list
	11:00 A.M.	Administer immediate reaction survey

APPENDIX C

STUDENT TEACHING INTERNS

STUDENT INTERN
PRE-SERVICE TRAINING
1972

Milford High School
Library Conference Room
1:00 - 2:30 P.M.

September 11	Introduction to D.O.V.M. - tape/slide presentation Career development - overhead transparencies Specific duties of interns Administer the Vocational Development Inventory
September 12	1:00 - 1:30 Hand tool use and safety requirements Cardboard carpentry, electricity, silk screen printing 1:30 - 2:00 Reading - Mrs. Justice 2:00 - 2:30 Speech & Hearing - Mrs. Klein
September 13	1:00 - 1:30 Human Relations - Mrs. Baynard 1:30 - 2:00 Learning & Behavior Problems - Mr. Siler
September 14	1:00 - 1:30 Continuous Progress - K-4, Mr. Jamison and Mr. Williams, Elementary Principals 1:30 - 1:45 Individual Instruction - Mrs. Holleger 1:45 - 2:30 Use of A-V equipment - movie projector, overhead, slide projector, tape recorder - Mr. Haight, Industrial Arts Teacher
September 15	Introduction to cooperating teachers Explanation of grading system Attendance procedures

THE DUTIES OF A STUDENT TEACHING INTERN WILL CONSIST OF THE FOLLOWING:

1. Supervise a small group while the teacher is busy with other students.
2. Read or tell stories to the class.
3. Help individual children with motor coordination activities or speech therapy lessons.
4. Write lesson assignment on chalkboard.
5. Supervise educational and recreational games.
6. Help the teacher conduct students to various school activities.
7. Arrange displays of student work.
8. Gather materials and books for the teacher and class.
9. Prepare, set-up, operate and return instructional materials and equipment.
10. Check to see that children understand the teacher's directions.
11. Prepare visual aids.
12. Assist with recess and preparing children to go home.
13. Decorate the classroom for various holidays and seasons.
14. Distribute materials and help students locate specific materials.
15. Duplicate instructional materials for the teacher.

DELAWARE'S OCCUPATIONAL - VOCATIONAL MODEL

STUDENT TEACHING INTERNS

COURSE OVERVIEW:

A course has been developed to offer high school students the opportunity to work with elementary school students and teachers. The Career Education activities that are being introduced into the elementary schools will increase the use of tools, machines, and materials in the classroom. Some sample units will be rockets, animals, construction, electricity, machines, photography, printing, textiles, and others. The high school student will work with groups of elementary students under the direction of the classroom teacher. High school student interns will spend their afternoons in the designated elementary school.

SELECTION PROCEDURES:

The senior counselor will screen records to determine those students who are interested in teaching or child care as a career possibility. This group of students will then be gathered together and the program explained to them, and those interested will be asked to sign up for the course.

TRANSPORTATION:

The bus run will begin September 18, 1972 and continue until June 1. The bus will leave the high school at 12:55 p.m. and proceed to Banneker and Ross Schools. The bus will pick up student interns and return to high school by 3:10 p.m. All participants in the program must ride the bus.

ATTENDANCE:

The receiving elementary school is responsible for keeping accurate records of intern attendance. When an intern does not report to the elementary school, the elementary principal should call the high school attendance office and report the absence.

Student Teaching Interns - continued

EVALUATION:

The attached evaluation sheet will be completed each marking period by the cooperating elementary school teacher. This progress report is simply a check sheet that the teacher fills out and reviews with the student. The cooperating teacher will be sure to complete the written evaluation portion of the progress report. Interns will receive a letter grade each 9-week marking period.

DELAWARE'S OCCUPATIONAL-VOCATIONAL MODEL

Date _____

PROGRESS REPORT

Progress Report of _____ in _____
(Student) (Training Agency)

Directions: Read over each line carefully. Place a check mark over phrase which describes the student most accurately. Make only one mark on each line, and be sure to mark every line.

	4	3	2	1
1.	Makes an excellent appearance.	Usually neat and appropriate in appearance.	Sometimes neglects appearance.	Should improve appearance.
2.	Personality is outstanding.	Has a pleasing personality.	Personality is unimpressive.	Does not get along well with others.
3.	Unusually enthusiastic about work.	Shows interest in work most of time.	Interested only in certain phases of job.	Should show more interest in work.
4.	Goes out of the way to cooperate.	Is usually cooperative.	Helps only when asked.	Does not work well with others.
5.	Reliable in following directions.	Usually follows directions well.	Sometimes careless in following directions.	Cannot always be relied upon to follow directions.
6.	Recognizes work to be done and does it without direction.	Sometimes goes ahead in work not assigned.	Performs regular routine duties only.	Seldom seeks work beyond regular routine duties.
7.	Wise in actions and in making decisions.	Usually shows sound judgment.	Sometimes shows lack of judgment or discretion.	Lacks ability to make sound decisions.
8.	Has perfect attendance.	Occasionally absent but with good excuse and advance notification.	Occasionally absent without good excuse or notification.	Frequently absent.
9.	Always on time.	Occasionally late but with good excuse.	Occasionally late without good excuse.	Frequently late.
10.	Is outstanding in production.	Exceeds average production.	Is average in production.	Should produce better.

35-40 A
25-34 B
20-24 C
5-19 D

GRADE _____

(SEE REVERSE SIDE)

Comment on instances where performance is particularly high or low:

Comment on ways in which the student can show improvement:

I have read and understand this progress report_____
Student

Cooperative Teacher_____

DELAWARE'S OCCUPATIONAL-VOCATIONAL MODEL

Date_____

PROGRESS REPORT

Progress Report of _____ in _____.
(Student) (Training Agency)

Directions: Read over each line carefully. Place a check mark over phrase which describes the student most accurately. Make only one mark on each line, and be sure to mark every line.

1. _____

Makes an excellent appearance	Usually neat and appropriate in appearance	Sometime neglects appearance	Should improve appearance

APPENDIX D

JOB PLACEMENT AND COORDINATION

DELAWARE'S OCCUPATIONAL - VOCATIONAL MODEL

JOB PLACEMENT AND COORDINATION
YEAR END HIGHLIGHTS

by

Arthur L. Bright

Job Placement Coordinator

The following paragraphs will explain the major activities of this office.

Tree Planting Crew

Cooperation with the State Agriculture Department's Forestry Section and local farmers has provided a number of students with experiences in commercial tree planting. The crews are self-supervised and usually consist of less than 12 students. Students are paid $30.00 for planting 1,000 trees on an acre of land. Students can average about 1 acre a day depending upon the condition and location of the planting site. Weather, distance to water, and crew organization are other factors influencing the number of trees that can be planted.

Senior Class Presentation

In an effort to inform all seniors of the location and responsibility of the Job Placement Coordinator, a presentation was presented to all seniors in Government classes.

The rationale for Delaware's Occupational-Vocational Model was explained along with the job description of the Job Placement Coordinator. Local occupational opportunities were discussed along with a review of prevailing job market conditions. A systematic procedure was outlined describing how to look for a job. Discussion revolved around the rela-

tionship between personal characteristics and job descriptions that one should consider when making a career decision.

American Vocational Guidance Week (October 24-29)

Participation by students made this a most successful week. On Mónday, students in different disciplines presented a 10-minute skit on careers related to a specific discipline. Awards were presented for the best skits.

The career theme was carried out in individual room displays. Corridor areas were designated to be decorated by different departments. Each room and corridor was judged. The winning department was presented with an award which acknowledged their efforts. All displays were left intact for an open house which followed the dedication ceremony of the new high school.

During the week, twenty-nine different resource speakers gave presentations about different careers. Special effort was exerted to include all the career clusters.

The theme of the Homecoming Parade was "CAREERS".

Wye Institute

The Wye Institute Seminar was designed to develop awareness in personnel responsible for career development concerning existing and

future career opportunities on the Delmarva Peninsula. Seven of the largest industries located on Delmarva were represented: poultry, apparel, seafood, chemicals, hardware, electronics and printing. These industries employ the majority of factory workers on the peninsula.

The following four questions were addressed:

1). What career opportunities exist on Delmarva now?

2). What career opportunities will exist in the future?

3). How can students be made aware of these opportunities?

4). How can students be prepared for these opportunities?

Ancillary Manpower Planning Board

The Ancillary Manpower Planning Board members represent all agencies involved in manpower planning. Information regarding other State and Federal MDT programs are extremely helpful in counseling students regarding training programs separated from the conventional school system.

Two-Day Career Seminar For Seniors

On April 27th and 28th, a two-day career seminar was arranged for 45 seniors who were experiencing difficulty in making a career choice.

The objectives of the two-day seminar were to provide students with information designed to:

...broaden their knowledge of opportunities that exist within and outside their geographic area.

...increase their appreciation of technology and it's influence on the job market.

...help them secure a job.

...assist them in locating employment opportunities.

...help them make career decisions.

...assist them in completing job applications.

...increase their understanding of business and industry.

Kent County Vocational-Technical Center Business & Industrial Survey

An Industrial and Business Survey was conducted by mailing an instrument to 835 employers throughout Kent County.

Graduates of KCVTC seek employment beyond the geographic boundaries of Kent County. Therefore, the instrument was sent to employers outside of Kent County who employ trained workers.

The primary purpose of this survey was to provide occupational information that could be used by the administrative staff at Kent Center. Specific objectives of the survey were to provide pertinent information regarding skilled trade areas now being taught at the Center.

The instrument was designed to provide the following data: total employment, projected employment needs, willingness to cooperate with KCVTC in developing advisory councils, availability of cooperative work stations, and curriculum revision.

Unfortunately, only 120 employers returned the questionnaire.

Jobs

The Job Placement Office received 34 requests from employers. These requests are categorized below:

	Companies	Jobs
1. Factory employment	5	21
2. Yard work	8	10
3. Babysitting	4	4
4. Housework	3	3
5. Office or clerical	4	5
6. Waitress	2	2
7. Business	4	5
8. Odd jobs around homes	3	3
9. Agriculture	1	6
TOTAL	34	59

APPENDIX E

EXTERNAL EVALUATION

bivens & associates inc. PLANNING CONSULTANTS

231 WEST LOOCKERMAN ST. DOVER, DELAWARE 19901 302/674-4819
635 W. INDIAN SCHOOL RD. PHOENIX, ARIZONA 85013 602/279-1913

September 22, 1972

Mr. Joseph English, Project Director
Occupational-Vocational Education Model
906 Lakeview Avenue
Milford, Delaware 19963

Dear Mr. English:

Bivens & Associates, Inc. is pleased to transmit this Evaluation Report for the second year of the Occupational-Vocational Education Model for the State of Delaware in accordance with our subcontract No. DOVM-SUB-2 (Revised).

The Evaluation Report for 1971-1972 provides analysis of activities relative to the Elementary T4C Program (grades K-4) as well as programs established for grades 5-8. Evaluation in the high school was based upon job placement and guidance activities. Overall Project activities were reported and examined to determine fulfillment of the goal and objectives of the DOVEM.

We appreciate the opportunity to extend our professional services to the Occupational-Vocational Education Program in Delaware.

Sincerely,

John A. Bivens, Jr., AIP
President

JAB:er

Enclosure

bivens & associates inc. PLANNING CONSULTANTS

231 WEST LOOCKERMAN ST. DOVER, DELAWARE 19901 302/674-4819

Evaluation Report

AN OCCUPATIONAL-VOCATIONAL EDUCATION MODEL

Submitted to

Mr. Joseph English
Project Director
Milford, Delaware

by

Bivens & Associates, Inc.
Planning Consultants

September 15, 1972

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SUMMARY

The major emphases upon the second years' activities of the Delaware Occupational Vocational Education Model were Program Development and Pilot and Demonstration.

The Technology for Children (T-4-C) element has been expanded to all of the elementary schools within the District. Pre-training for teachers involved in this element has been continuous but has not been sufficient to meet teachers' stated needs. The teachers have strongly supported the application of training sessions but feel that more are needed to provide a more effective feel for teaching occupational-vocational/career oriented subjects.

The role of the Job Placement Coordinator at the high school has been expanded and increased during the past year. In an effort to provide intensive occupational guidance and counseling for all students during the last years of secondary school, the Project has added more counselors at the high school.

Although standardized instruments and test designs have been administered at the elementary levels (T-4-C Program), they have yet to effectively prove product outcomes.

The Advisory Council continues to function but without a defined plan of operation. One main task of this body is to provide communication between the Project and the Community,

i.e., community awareness. Evidence of a successful effort in this respect is not available. The 1972-73 Project year should be a time of action for the Council.

The Delaware Occupational Vocational Education Model is replying to all of its stated objectives. However, some objectives are being fulfilled to a larger extent than others. A careful balance of objective fulfillment is needed to produce an effective program and the DOVEM must use this next year to fill the identified voids which now exist.

INTRODUCTION AND BACKGROUND

The Occupational-Vocational Education Model for the State of Delaware was established by joint agreement between the Kent County Vocational Technical School District and the Milford School District. This program was made possible by a three year federal grant from the U.S. Office of Education.

Each year an independent evaluation is required by the Office of Education. This evaluation report is in fulfillment of this requirement as well as to assist in the improvement of the program during its planning and implementation. Bivens & Associates, Inc., Planning Consultants, of Dover, Delaware was selected to provide the necessary professional services needed for the evaluation.

This evaluation report covers the second year of the project which has been predominantly implementation of Project activities relative to the Elementary T-4-C Program (grades K-4) as well as the program established for grades 5-8. Also, the job placement and guidance activities (grades 9-12) were evaluated.

The document Preparing Evaluation Reports, published by the U.S. Office of Education, was followed in the preparation of this evaluation report. An attempt was made however, to adjust

the outline to reflect the specifications and unique features of the Delaware Model.

Bivens & Associates, Inc. utilized personal interviews and review of pertinent documents, reports, and other materials in the conduct of the evaluation. The staff of the Occupational-Vocational Education Model, the teachers, administrators, and other individuals were extremely cooperative in this effort. Special appreciation is expressed to Mr. Joseph English, Project Director; Mr. Arthur Bright, Job Placement Coordinator; Mr. Carl Hoffman, Curriculum; Mr. Jay Price, Evaluation Monitoring; and Ms. Sandy Dale for their cooperation.

LOCALE

The Milford School District is located in the southeastern corner of Kent County, Delaware, with a portion extending into adjacent Sussex County. The District contains some 166 square miles with an estimated 18,000 total population of which 4,120 attended school during 1971-72. The communities of Milford and Houston account for a little less than half of the total population of the District, the remainder of the population being distributed throughout the peripheral rural sections.

According to the Comprehensive Plan for the City of Milford prepared by Herbert Smith Associates, the 1970 population figure was 5,374 persons. Projections of this base figure indicate a total population of 5,820 by 1980 and 6,303 by 1990. Accurate population data are unavailable for the geographic boundaries of the Milford School District because of lack of comparability between census tracts and school district boundaries.

The economy of the Milford area could be considered in a relatively stagnant position. The Smith Associates report states, "The immediate future for the local economy of Milford does not appear to be bright." However, the Milford area maintains a strong economic base -- excellent physical farming environment. With increased effort to improve the economic structure by local community leaders, the current situation could easily change.

The Directory of Central States, Manufacturing, published by the T.K. Sanderson Organization in 1968-69, lists 24 manufacturers in the Milford area with an estimated employment of 2,060. A brief analysis of the nature of the manufacturers within the area indicates the potential availability of jobs for non-skilled to semi-skilled workers -- potential employment for graduates of the Milford High School.

THE SCHOOL SYSTEM

Six schools operate within the Milford School District with an approximate enrollment of 4,120 (1971-72). During the 1971-1972 school year, 186 teachers and 26 administrators were employed by these schools.

The following table indicates the various schools within the District and their individual 1971-72 enrollments.

School	Students	Teachers
Milford High School	1214	60
Middle School	1293	60
Lulu M. Ross	660	27
Benjamin Banneker	604	28
Evelyn L. Morris	228	7
West Milford	121	4

The 1971-72 school year presented a few changes in the overall system of the schools. Paramount in the changes was the movement of the fifth and sixth grade students from Benjamin Banneker Elementary School to the Middle School. The following schools serve grades K-4: Lulu M. Ross, Benjamin Banneker, Evelyn L. Morris, and West Milford. Grades five through eight attend the Middle School with grades nine through twelve attending the High School.

An effort to monitor graduated students from the Milford High School has been tried in the past. These data should provide significant assistance in the design of the occupational vocational program particularly in the upper grade levels. A

summary of movement of graduated students from the Milford High School was not attempted during the 1971-72 school year due to two main factors:

1) Response from graduates in previous years had not been significant.

2) An accurate and meaningful measuring instrument has not been effected.

However, the statistics gathered for 1969 graduates are presented. A comparison of this data with those developed in future years may prove to be of significant value in evaluating part of the overall success of occupational-vocational education within the District.

SUMMARY OF MOVEMENT OF GRADUATES
MILFORD HIGH SCHOOL
1969

Area	Male	Female	Total
University of Delaware	11	11	22
Delaware State College	2	4	6
Other Colleges	9	6	15
Junior Colleges	25	16	41
Armed Forces	18	1	19
Employed	16	16	32
Unemployed	3	1	4
Homemaking	-	14	14
Unknown	6	9	15
Not Reported	-	-	6
			174

Of the 174 graduates, 84 or 48% continued their education at other facilities. Approximately 51% of the 1969 graduates of Kent County continued their post high school

education. The state figure for the same category in the same year was between 51% and 52%.

The statewide figure for students entering employment was 29% while the figures for Milford High School were 18%.

The majority of the categories listed above and the percentages of students entering the various endeavors are closely in line with the figures for the entire State of Delaware.

SCOPE OF DOVEM PROGRAM

The January 1, 1971 -- March 31, 1971 DOVEM quarterly report states, "Delaware's Occupational Model was developed to bring about the synthesis of academic and vocational education in an operational setting consistent with the philosophy of providing relevant education for all students." The project is designed to develop exemplary education programs ranging from kindergarten through senior high school and can best be summarized by the overall goal and the supporting objectives of the Model. These are:

Goal

To create a meaningful, cooperative effort between the Kent County Vocational-Technical School District and the Milford School District for the purpose of expanding vocational education to meet the needs of all children served by the District.

Objectives

1. Occupational orientation at elementary and secondary levels.
2. Development of work experience and cooperative education programs.
3. Specific training in job-entry skills for students not previously enrolled in vocational education programs prior to leaving school.
4. Intensive occupational guidance and counseling for all students during the last years of secondary school for the purpose of insuring initial job placement.

5. A commitment from the District to continue the successful elements of the project after the contract is terminated.

Project Activities

According to the Quarterly Progress Report covering activities from September 1, 1970 to December 31, 1971, an overall outline of DOVEM program activities was stated. The basic structure follows:

A.	Planning	First Year
B.	Program Development	First and Second Years
C.	Pilot & Demonstration	Second Year
D.	Evaluation	Continuous
E.	Dissemination	Second and Third Year

The primary focus of this Evaluation Report is upon Project activities within the Technology for Children (T-4-C) Program (grades K-4) as well as programs established for grades 5-8. Job placement and guidance activities (grades 9-12) are also evaluated.

Special contract stipulations directed the consultant to additionally:

1) Develop standardized instrumentation to evaluate teacher attitudes toward program activities.

2) Obtain information on public reaction to program activities of the Model.

3) Assess data and information generated by the internal evaluation monitoring program with respect to project accomplishments.

4) Conduct sample non-directed interviews of teachers to obtain information on intuitive feelings and observed reactions by Program teachers relative to student changes, etc.

An outline follows which lists the major activities of the Project which shall later be discussed and evaluated.

I. Organization and Personnel
II. Program Planning and Design
III. Training
IV. Evaluation Monitoring
V. Advisory Council
VI. Community Awareness

I. Organization and Personnel

The 1971 Evaluation Report prepared by Bivens & Associates, Inc. states that the roles of each member of the organization are clearly defined and understood. This statement is applicable to this year's activities as the individual roles remain sufficiently defined. Current management practices appear to allow a well-balanced staff to function quite effectively.

II. Program Planning and Design

The bulk of the planning activities within the framework of the Project occurred during, and appropriately so, the first year of the operation of the Model. However, a viable program requires continuous monitoring of planning efforts. Evidence indicates that planning has been a continuous process and has expanded to accommodate changes within the Project.

The T-4-C program has been effectively incorporated into all of the elementary schools within the District. A major concentration of activities is found in the Ross and Banneker schools. Originally T-4-C activities were concentrated in the Ross school but expanded to all of the others this year. The high concentration within Ross and Banneker is additionally supported by the high pupil enrollment at each school.

High School students continue to use the facilities at the Kent and Sussex Vocational-Technical Centers on a limited basis. This element of the overall program is expanding rather rapidly with a marked increase in student participation.

Increased efforts have been made in the High School directly related to activities of the Job Placement Coordinator. The Coordinator has made personal contact with individual businessmen in the community and a survey of 46 industries in the Milford area has been completed. The product of these efforts has been to identify potential employers and to feed this information back to the students via the counseling efforts within the High School.

The Occupational Mall, a product of efforts of the Milford High School staff, is, as its name implies, a center of occupational activities.

Five occupational areas are explored within the Mall: restaurant facility, hospitality suite, horticulture (greenhouse and flower shop), Mr. Fix-it Shop, and an automotive service station. The opening of the operation of the Mall (Fall, 1972) shall provide the Job Placement Coordinator a valuable instrument in his efforts. A close working relationship is anticipated between the Job Placement Coordinator and the occupational-vocational staff at the high school.

A Career Development Laboratory exists at the Milford Middle School. Para-professionally staffed, the Lab is designed to assist teachers participating in the team teaching program at that school.

III. Training

As in the previous year, workshops have been conducted for teachers participating in the T-4-C program. The Curriculum Coordinator conducted two workshops each of one week duration for teachers -- one T-4-C workshop and one with a Middle and High School Career format.

The workshops were designed to present to the teachers basic elements of the Project and to allow some practical experience particularly in the T-4-C element. Both workshops allowed considerable input from teachers through "brainstorming" sessions and self evaluation.

IV. Evaluation Monitoring

At the time of the preparation of this report, only the results of the internal evaluation monitoring program at the elementary level were available

for review. Two (2) evaluation instruments were designed to ascertain the relative accomplishment of the Project objective for the elementary level, i.e., occupational orientation at the elementary levels for occupational awareness.

The first test design on occupational awareness was given to a sizeable sample of T-4-C and non-T-4-C students in grades one through four. The second test design on the degree to which Project-supported activities provided a memorable and/or enjoyable experience in school was given to all students in the same grades. Neither test design appears to provide positive evidence of meeting the Project's objective. Commenting on the first evaluation design, the evaluator stated, "If the T-4-C curriculum has a cognitive effect at the elementary levels, it would appear that this effect is also obtained in classes not using T-4-C." The second design did show that. . ."Project-supported activities have provided experiences that are remembered and valued positively." However, the basic issue of improved occupational awareness through the Project-supported activities has yet to be conclusively proven through the evaluation monitoring activities.

V. Advisory Council

The Delaware Occupational-Vocational Education Model Advisory Council consists of members from the field of education, community business leaders, and interested civic leaders. These

17 members were selected and invited to participate in Advisory Council activities by the Director of the Project. Meetings are held periodically and are reported in the Project's Quarterly Reports.

An accurate definition of the Advisory Council is unavailable and the roles of the members is unclear.

VI. Community Awareness

A number of objectives have been stated in an effort to create and maintain a high level of community awareness of Project activities. A report from a private public relations firm contracted to assist in providing a plan for stimulating community awareness lists eight objectives:

1) to provide maximum possible visibility for the Project.

2) to try to affect the allocation of resources in order to provide (a) more educational funding in general, and (b) a larger portion of educational funding for occupational-vocational education.

3) To relate career education to current day needs and problems.

4) To try to change the image of vocational education from the view that it exists only for those who can't make it in the regular system.

5) To counter the criticism that kids are being forced prematurely into rigid categories, from which they can never escape.

6) To make employers aware of the program in the hopes they will provide job opportunities.

7) To point out that a more relevant educational program will improve the motivation of students and result in obvious benefits.

8) To develop additional project funding from the private sector.

EVALUATION PROCEDURE

The procedure for preparing this Evaluation Report incorporated three elements:

1) Interviews
2) Review of Data
3) Group Discussions

A standardized survey instrument was prepared by the consultant and approved by the Director of the Project. Four survey instruments were prepared, each addressing itself to specific areas of concern:

1) Teachers
2) Administrators
3) Advisory Committee Members
4) Community Leaders

A random sample of each of the populations was selected by the consultant for interview. The interviews were conducted in private, recorded on tape, and analyzed by the consultant team.

Of the 73 teachers participating in the project, a total of 16 were interviewed; 4 from the Middle School and Ross Elementary, 3 from the High School and Banneker, and one each from the West and Houston schools. Principals in the High and Middle Schools were also interviewed as was one main elementary school.

A list of 17 Advisory Committee members was provided by the DOVEM staff. Four interviews were conducted.

Four interviews were conducted also with community leaders of Milford. The sample selected was again random but provided input from a wide cross section of the Milford business community.

A number of documents were made available by the DOVEM staff. Included were quarterly reports, workshop agendas, evaluation monitoring reports, plus various other planning and procedural documents contained within the files of the Project.

The consultant met with the DOVEM staff several times during the course of the evaluation procedure. These meetings provided concentrated input and reactions from all members of the staff, as well as detailed discussions of individual activities.

PROJECT EVALUATION

The stated goal and objectives of the Delaware Occupational Vocational Education Model provide the bases from which to assess and evaluate the operation of the project. Included below are the objectives as stated with a brief evaluative summary.

I. Occupational Orientation at Elementary and Secondary Levels.

Of all of the elements reviewed in the overall operation of the DOVEM, this objective appears to be best met. The reported individual class room projects and teacher interviews indicated concentrated activity to support this objective. This past year witnessed not only more student awareness of occupational orientation but also increased awareness of instructors as to their roles. However, a great deal of interest was shown for more and continued training for teachers. Additional effort from the DOVEM staff should be directed to satisfying the teachers' needs in this aspect.

II. Development of Work Experience and Cooperative Education Programs

A significant increase of students attending the Kent and Sussex County Vocational Technical Schools is noted for the 1971-72 school year. This increase may be related to occupational awareness created by the DOVEM and by teacher

involvement in programs at the centers sponsored by the DOVEM. Approximately 11% of the students of Milford High School participated in the program during the 1970-71 year while 1971-72 figures total approximately 16%. A jump to 22.5% for 1972-73 is projected from the records of the Kent and Sussex institutions.

The job placement coordinator has been quite active in efforts associated with this objective. The completion of a survey of 46 industries in the Milford area is an invaluable tool for the placement of students into jobs; hence the development of work experience. Extra responsibility should be given to the Job Placement Coordinator to assist in the overall public relations effort in the community. His position of closeness with the community establishes a definite channel for information dissemination.

The opening of the Occupation Mall adds to the measured effectiveness of this objective. The analysis of the progress of the Mall should be of increased value to the Model in terms of the extent of cooperative education which is generated.

III. Specific Training in Job-Entry Skills for Students not Previously Enrolled in Vocational Education Programs Prior to Leaving School.

This objective is directed to the students in an effort to assist them in preparing for the formalities of obtaining a job; resume preparation, how to look for a job, how to prepare for an interview, etc.

The Job Placement Coordinator conducted a 2 day seminar with 43 seniors this past year to acquaint them with various non-directive job entry skills. The high school counselors conducted individual sessions with graduating students who were faced with this problem.

Assistance is also provided on an individual basis with students following graduation who are still without employment and unsure of what course to follow. The Job Placement Coordinator and high school Counselors provide this extra assistance.

IV. Intensive Occupational Guidance and Counseling for al Students During the Last Years of Secondary School for the Purpose of Insuring Initial Job Placement.

The activities of the Job Placement Coordinator and the extent to which he has implemented those activities exemplify achievement of this objective. Additional counselors have been added to the Milford School District and their efforts are constantly monitored by the Job Placement Coordinator. Evidence indicates that efforts to provide intensive occupational guidance and counseling for all students are occurring. The effectiveness of the efforts should be analyzed and measured by continued monitoring of Milford High School graduates.

V. A Commitment from the District to Continue the Successful Elements of the Projected after the Contract is Terminated.

This objective can be evaluated only at a future date when the District assumes a concrete position. Seven proposed goals for Delaware Occupational/

Vocational Model were presented to the Milford School District for approval. In late June, 1972 the District indicated approval of the following goals:

1. To make all educational subjects more meaningful and relevant to the student through restructing and focusing instruction around a career development theme.

2. To provide all students with guidance, counseling, and instruction needed to develop their self-awareness and self-direction; to expand their occupational awareness and aspirations; and to develop appropriate attitudes about the personal and social significance of work.

3. To provide an opportunity for all students to gain an entry level marketable skill prior to their leaving school.

4. To prepare all students completing secondary school with the knowledge and skill to pursue further education or to become employed and preferably both.

5. To provide a placement service to insure that every student reaches the next step in his development whether it be employment or further education.

6. To build into the educational system greater utilization and coordination of community resources in order for students to learn and actively participate in the process of

relating "academic school experiences" to the vocational role patterns existing in the community.

7. To increase the educational and occupational options available to all students by providing for a flexible educational system which facilitates entrance and re-entrance into either the world of work or the educational system.

INTERVIEW ANALYSIS

As mentioned earlier in this report, three procedures were used in the development of the overall evaluation of the DOVEM -- interviews, data analysis, and group discussions. The questions asked in the interviews follow with appropriate responses.

Teachers

Specific questions relating to the mechanics of the Model were directed to a sample of the teacher population in each of the elementary schools, middle school, and high school. Each question is listed below with a summary of comments received from each.

What were the most effective activities presented to your students this past year in the area of career education /T-4-C? The least effective?

A general assessment of the activities presented to the students during the 1971-72 school year indicates a high degree of effectiveness both in planning and implementation. The use of group instructors in the middle school proved effective but lacked overall coordination. The activities discussed most included:

- A first grade level garden project which stimulated student interest both in and outside the classroom.

- Manufacturing activities such as the kite making project at the middle school and a candle making assembly proved to allow students exposure to a number of work disciplines.

- A third grade level class applied work theory to a sewing project. Both males and females were involved in the project.

The least effective activities could be summarized as those which involved large numbers of students. In most of these cases it was noted that the number of students involved in the various projects was too large to provide optimum individual exposure. Occupational-vocational projects demand close supervision and instruction from teachers. Obviously the lack of attention given to students results in the loss of overall effectiveness of the Project.

What special techniques did you apply in correlating the regular curriculum with career education/T-4-C subjects?

The most effective techniques employed this past year were utilization of resource persons, field trips, independent lessons, and audio-visual presentations. Field trips were noted as an outstanding activity, but careful pre-planning and coordination is definitely needed and additional assistance is required by the teachers.

How do those techniques relate to those earlier methods discussed in the career education/T-4-C workshops?

Rather than discuss techniques acquired through the attendance of workshops, the respondents chose to direct their discussions to the workshops themselves. Every teacher interviewed enthusiastically supported and applauded the workshops but suggested that more should be added. Specifically, the workshops were not long enough to accomplish their individual goals, the design of the workshop should be coordinated with specific age and grade levels, and more specialized workshops should be established.

Just what was the program trying to accomplish through you and what evidence (if any) do you have to support or not support the effectiveness of the program?

In general, the respondents directed replies similar to those stated as the goals and objectives of the Model. Effectiveness of the program could be supported by the continued growth of student awareness of careers. It was also observed that culturally-disadvantaged students attained greatest benefit through working with various skill-type projects.

What effect, if any, did the general environment of the school have upon the program?

In most cases the general environment of the school proved to be compatible with the operation of the DOVEM. Administrative personnel have willingly supported requests from teachers

and have provided certain inputs to the Model. However, the middle school poses a minor problem at this time. "The environment of the middle school is considered to be a bit chaotic. The students are involved in a large number of things and have to move around too much. These factors tend to excite the students but with excitement which is not oriented to the learning process."

Discuss the attitudes of your students in general toward the program -- your attitude.

The attitudes of the students could best be measured by the teachers relative to responses to the overall development of the various projects. In most cases the students appear extremely eager to participate in the projects and even carried over the related activities into free time. Again, in most cases, teachers observed positive student attitudes toward the Project. The positive attitude is also applicable to all teachers interviewed. One teacher stated, "The initial experience gained by some of the first year teachers had inspired them to become more creative in the area of Career Education."

What changes have you observed in the students as a direct result of the program?

The projects associated with the DOVEM have stimulated alertness in students of lower grade levels. Some evidence indicates alertness and enthusiasm "carry-overs" to other subjects. Changes in high school students have been observed

in specific career oriented subjects, but not in the students' overall school career.

Can you as a teacher, assess in general the operation of the Delaware Occupational-Vocational Education Model?

The primary response from the majority of the teachers interviewed was that the DOVEM is basically sound in its overall development and operation. No negative assessment was made by any teacher; however, several salient recommendations were offered in an attempt to provide an input to further enrich the Model. Listed below are several of those comments:

1) Establish T-4-C labs in lower grades (development labs similar to those of the Middle School).
2) Establish clearer methods of evaluation of students and projects for teachers.
3) Allow teacher observation of other programs in other Districts.
4) Add more teacher workshops to:
   a) Relate project activities.
   b) Provide refresher courses in tool operation and familiarization. (Particulary female teachers).
5) Provide smaller classes.
6) Direct expertise to assist teachers in preparing lesson plans within the objectives of the Project.
7) The placement of students into the various classes should be given more consideration. Problem students can (with some teachers) completely disrupt the activities of the class and ruin the chances for other students to gain from the class.

Principals

Interviews were conducted with three of the principals within the Milford School District. A summary of the responses follows each of the questions below.

Describe in general the DOVEM activities in your school during the past year.

This question seemed to pose a bit of a problem for respondents. One replied that he was unable to specifically comment upon the activities at his school due to the meld of T-4-C activities with the regular curriculum. A few specific projects were cited, but a complete knowledge and involvement was not evident.

How did those activities relate to the overall school program?

The high school reported an increase in the number of students requesting career education courses, which is considered a direct response to the development of student awareness to the world of work. An elementary school principal reported that the program afforded an extra avenue of expression and experience to a greater number of students.

What special consideration was given DOVEM activities by your office during the school year?

The respondents replied almost identically to this question -- active participation from the principal was generally not requested.

What role did you as principle administrator provide in the implementation of the program?

As in the previous question -- none.

What do you think the program was trying to accomplish through you and what evidence (if any) do you have to support or not support the effectiveness of the program?

Again the respondents were in doubt as to the role of the principal in the DOVEM. The effectiveness of the program could, to a certain extent, be measured by the enthusiasm of the students. Additionally, the high degree of involvement by the teachers in the program could give strong indication of positive effectiveness.

Discuss in general the attitudes toward the program of: A) Students, B) Teachers, C) Yourself.

The "snob" attitude of the academic students toward those participating in the career program is a traditional problem source in the high school. However, certain measures are being taken to allow the two areas have more dependency upon each other which should hopefully create a better understanding and alleviation of the problem.

Teachers indicate great personal feeling and pride in their accomplishments within the program and feel the objectives of DOVEH are merited. Younger teachers have adopted the program with greater ease than the older segment.

The principals are very agreeable with the theory of career education and hope for increased involvement from their position.

From your administrative viewpoint, how can the effectiveness of the program be improved?

Increased involvement -- more students should be allowed exposure to the program, the academically talented student should not be deprived of the experience, teachers should be better familiarized with the goals and objectives of the program, and more personnel are needed to implement the program.

Advisory Council

The DOVEM Advisory Council is composed of leading citizens in the Milford area. The members are selected by the Director of the project and meetings are held regularly to discuss and analyze the operation of the Model.

A sample of the population of the Advisory Council was determined randomly and presented certain interview questions. Four members were chosen as respondents.

What are the basic objectives of the Delaware Occupational Vocational Education Model?

The replies from all of the respondents were the same, "to job orient students and prepare them for the world of work."

What is the role of the Advisory Council?

The respondents differed in their views on the role of the Council. Replies ranged from, "to make program changes"

to "establish job opportunities within the community." An overview of the replies indicates that a firm definition of the role of the Advisory Council has not been formulated.

What do you consider to be the major accomplishments of the Council within this role?

The replies were all in the negative. Members could not pinpoint concrete accomplishments.

Can you describe the major accomplishments of the Model within the overall school program?

A number of accomplishments were cited by members of the Advisory Council. The most significant accomplishment cited was that of enthusiasm created in the schools. Everyone in the system, including students, teachers, and administrators, is involved in the process and the enthusiasm is shared by all.

Discuss in general the attitudes of the community toward the program.

As in the previous question, a great deal of enthusiasm is created by the Model and is carried over to the community. However, the enthusiasm within the community is limited to a very small portion -- those who are informed of the operation and objectives of the Model. Council members and business leaders are indeed interested in the project, but the general community remains uninformed.

As an Advisory Council member, can you comment upon how the effectiveness of the Project can be improved?

Two basic comments were made: 1) to establish a more programmed course of public relations; and, 2) the DOVEM should be allowed more time, more patience, and more findings.

Community Leaders

An attempt was made to determine the level of community reaction to the operation of the DOVEM. Respondents were chosen from a list provided by the DOVEM staff. Replies to the interview questions indicated very little knowledge of the program although a wide sample was attempted from the provided list.

What is the Delaware Occupational Vocational Education Model attempting to accomplish in the Milford area?

The main response was "to give people a trade." Some respondents referred to projects centering around the Occupational Mall as being the DOVEM. A number of respondents indicated they knew nothing at all about the project. At this response the interview was terminated.

How are you made aware of DOVEM activities?

Of the respondents with any knowledge of the Project, three media were indicated:

1. Newspaper articles

2. Civic club presentations.

3. Personal contact with DOVEM staff.

How does the program benefit the community?

Only one positive response was offered -- "to give the kids something to do -- exposure to careers." All others could not offer comments either in the positive or negative.

What direct contact have you had with the DOVEM activities at the school level?

Essentially none.

As a community leader in Milford, what, in your opinion, is the general attitude of the community toward the program?

Three comments were made and are quoted:

1. "I have not heard much about it; however, there are no strong objections."

2. derogatory -- "people think the program is a waste of money -- people don't know what's going on -- the program is new and people are slow to grasp it."

3. "No comment."

What program changes would you recommend to the DOVEM to further benefit the community?

In brief, better communications. One respondent stated, "The community can be responsive and is looking for more aggressive persons to encourage overall growth of the community."

CONCLUSIONS

The second year of the Occupational-Vocational Education Model, the period covered by this Evaluation Report, concentrated efforts on Program Development and Pilot Demonstration Program. Based upon interviews with the staff of the Model, administrators, teachers, and others, and upon our analysis and evaluation, certain conclusions are made which are intended to assist in the improvement of the Project.

Conclusion: MORE TEACHER WORKSHOPS ARE NEEDED THROUGHT THE YEAR.

All of the teachers indicated that they needed more assistance in their efforts to provide a more viable project. While materials and supplies are almost always available, the knowledge of "how-to" is not. The teachers conclude that they are certainly not versed in the techniques of teaching occupational awareness and the workshops which they attended have not satisfied this need. The quality of the present workshops is excellent but quantity is needed.

Conclusion: MORE EMPHASIS SHOULD BE PLACED UPON INCREASING COMMUNITY AWARENESS.

The goal of the Project is "To create a meaningful, cooperative effort between the Kent County Vocational/Technical School District and the Milford School District for the purpose of expanding vocational education to meet the needs of all children served by the District". The community is not aware

of this goal and the future implications of the Model itself. To extend the efforts of the Project beyond the period of time originally funded, community acceptance and approval must be forthcoming. The Model must relate to the community exactly what the product will be in the future - exactly how the community will benefit - and what the community must provide if it is to receive these products.

Conclusion: THE ROLE OF THE ADVISORY COUNCIL SHOULD BE BETTER DEFINED.

Evidence indicates that from its inception the advisory council has been a rather stagnant group. The organization of the council appears to be biased with most of its members being professional educators or administrators. One main function of the Advisory Council should be that of providing a channel of communication. Very little evidence of this exists - additionally, the selection of council members from the community should be directed to those individuals who are, in fact, community leaders and who can actively participate in council functions.

Conclusion: EVALUATION MONITORING EFFORTS SHOULD BE INCREASED TO ALLOW TEACHERS A MEASUREMENT OF THEIR EFFECTIVENESS.

To assess the impact of the DOVEM, a long-range plan for evaluation must be set in motion and monitored constantly. The results should be made available to teachers and administrators in an effort to assist those persons in determining the effectiveness of their roles.

APPENDIX F

INTERNAL EVALUATION

INTERNAL EVALUATION

Part I. Elementary Level - Grades 1 & 4

Purpose: At the elementary level, evaluation focused on the relationship of learning outcomes to Project-supported activities. More specifically, the evaluation has sought to answer two basic questions:

1). Is occupational awareness greater in Project-supported classrooms? (The T4C classrooms)

2). Have Project-supported activities provided a memorable and/or enjoyable experience in school?

These questions have been posed as means of assessing two Project objectives:

1). To develop occupational awareness at the elementary level, and

2). To provide meaningful experiences in the world of work and technology.

Procedures - Occupational Awareness

1. Definition - The construct of occupational awareness was defined as knowledge of occupations; specifically, knowledge of the occupational terms, titles, tools, and work environments. In terms of the

cognitive domain, it appears that awareness is a lower level skill involving memory. In the affective domain, Bloom (1964) has defined awareness as knowledge together with attending behavior, the attitudinal component.

2. Test Development - The test of Occupational Awareness developed by the Project staff is included with instructions in F-1. It was developed at the end of the school year and was based on those occupations teachers reported as having mentioned and studied in T4C classrooms, grades one through four. Monthly, class activity report forms were available and these reports were reviewed for occupational titles. A master list of 132 titles was compiled from these forms. Each teacher, T4C and non-T4C, received a copy of the master list and checked those titles mentioned in his classroom. Teachers also added titles not included on the master list.

Thirty occupational titles were selected to represent those workers in students' home, school, and community environments with approximately two titles from each of the fifteen occupational, career clusters. This selection procedure, based on school, home, and community environments, was suggested by the district curriculum guide for the elementary schools which contains the recommendation that workers in these environments be included as a part of the

"social living" curriculum for elementary students. The thirty titles chosen were compared to T4C teachers' master lists; at each grade level at least three of the three or four T4C teachers at that grade level had mentioned and studied each occupation on the test.

The project staff formulated questions for each of the thirty titles based on a term, tool, or work environment. These questions required the student to respond by circlung a "yes" or "no" answer. The items were balanced for "yes" or "no" correct response to avoid response set bias.

3. Sample - All students in grades one through four were tested, not including those students grouped in special education classes. For data analysis in the evaluation, ten students from each grade-one classroom were randomly selected while twelve students were randomly selected at grade-four level. These samples represent 40-50% of the total number of students in each classroom. The population of students in these grades had not been randomly assigned to classrooms at the start of the school year.

4. Design, Analysis, and Limitations - Data were analyzed in a hierarchal design for an analysis of variance. The main treatment

effect was Project supported T4C classrooms compared with non-T4C classrooms; classrooms were nested within treatment levels. Since four grade-one classrooms used T4C, four grade-one classes were randomly selected from the six non-T4C classrooms to serve as control classes for data analysis. At the fourth grade level, five classrooms were T4C supported and five were not. These five served as control for the five T4C classrooms.

The primary limitation of this evaluation was the possible bias presented by non-random assignment of students to classrooms. The presence of such a bias would account for a significant difference between treatment and control groups in this ex-post facto analysis; consequently, only the first and fourth grade data were analyzed since standardized test scores were available for possible covariance adjustment of group differences at these grade levels.

Results

Table 1 contains the results of the analysis of variance on occupational awareness scores for grades one and four. As indicated in the table no significant mean differences obtained for the treatment effect of T4C and non-T4C classrooms at either grade level ($p > .05$). However, the effect of different classrooms was significant ($p < .05$),

indicating the sampling bias of non-random assignment (i.e., differences between classroom groups).

No covariance adjustment was used on awareness scores since an analysis of variance on standardized reading scores in the hierarchal design indicated no significant mean differences between T4C and non-T4C classrooms ($p > .05$) although significant differences obtained between classrooms on mean reading scores ($p < .05$).

A multiple correlation coefficient was computed between occupational awareness and standardized reading and listening scores to estimate the distinctness of occupational awareness as a construct. Scores were obtained on a random sample of sixty-one students from the four grade-one T4C classrooms. The intercorrelations of the three scores are contained in Table 2. A multiple correlation of $R_{1.23} = .803$ was obtained.

Procedures - Estimating The Effects Of Project-Supported Activities In T4C Classrooms

The population of students in grades one and two, T4C classrooms, was interviewed in groups of two or three students at a time. Four classes were interviewed at grade-one and four at grade-two. The standard interview format in included in F-2.

Table 1
Analysis of Variance Results
On Occupational Awareness Scores

Source	SS	df	MS	F
Grade I				
A(T4C-NonT4C)	57.8	1	57.8	2.33
B within A	148.8	6	24.8	2.26*
within cell	833.6	72	10.97	
Grade IV				
A(T4C-NonT4C)	21.77	1	21.67	1.46
B within A	118.6	8	14.82	2.88*
within cell	566.8	110	5.15	

*$p < .05$

Table 2
Intercorrelation Matrix For Three Test Scores

	Occupational Awareness	Reading	Listening
Occupational Awareness	( )		
Reading	0.770	( )	
Listening	0.658	0.623	( )

Students were interviewed during the last two weeks in May at the close of the school year. As indicated by the interview format, students were asked to recall what they had done in school during the year. They were then asked to tell what they had enjoyed and what they had not enjoyed in school during the year. Interviews were recorded for response classification purposes.

At the fourth grade level, four of the five T4C teachers presented these questions to the students who responded with written answers.

Limitations

No estimate has been made on the reliability (stability or reproducibility) of responses obtained in the interview procedure. It seems reasonable to assume that these responses are influenced by primacy and/or recency effects in memory as well as the extent to which the classroom teacher has used T4C Project-supported activities.

Classification of Responses

Project staff members classified students' responses as being Project-related or not related. A response was considered related if the

mentioned activity was supported by Project funds. Examples of this classification are certain field trips, "the workbench", "making the puppet show", and "the garden".

Results

The results of response classification are presented in Table 3 and reported as percentages. No significance tests were computed since the total population of T4C classes was interviewed.

It is apparent from the results that significantly more "non-related" responses were given than "related" responses to both questions. At the same time, results indicate that "related", enjoyed responses are significantly different from "related", not-enjoyed responses.

Discussion

The possibility exists that non-random assignment of students to classes may account for non-significant differences in the main effect. If this were the case, then occupational awareness would be higher initially for the non-T4C groups and the T4C curriculum would have raised the level of treated students to that of the control in a period of several months. However, certain data suggest that curricular content may serve as a more plausible explanation.

TABLE 3
CLASSIFICATION OF RESPONSES BY PERCENT
TO TWO INTERVIEW QUESTIONS

	Activity Enjoyed		Activity Not Enjoyed	
Grades I & II (N=221)	Project Related	Not Related	Project Related	Not Related
No. of Responses	64	157	4	217
Percent	28.9	71.04	1.81	98.19
Grade IV (N=123)				
No. of Responses	61	62	0	123
Percent	49.5	50.5	0	100

As noted in the section on test construction, the test was formed in such a way as to "bias" the results in favor of the T4C classrooms since only T4C teacher report forms were reviewed for selection of test content. However, when each teacher's master list was scored for number of occupations mentioned, and scores were totalled and averaged, it was found that T4C teachers (N=17) had mentioned an average of 51 occupations while non-T4C teachers (N=19) had mentioned an average of 52 occupations. When the suggested guide for "social living" curriculum in the elementary grades is also considered, it seems possible that T4C teachers have either 1) taught a curriculum that is not unique to T4C classrooms, (i.e., both T4C and non-T4C teachers have taught similar occupational content and numbers of occupations based on a district curriculum guide.) or 2) if the curriculum is unique, then the test failed to assess those aspects of occupational awareness that were unique to T4C classrooms. This problem is one of content validity.

The inferences above suggest that future evaluations of T4C might be cast in both the formative and summative modes. If the T4C curriculum develops occupational awareness, and if this effect is unique within classrooms, then a formative evaluation is indicated. This approach requires that each teacher, or groups of teachers,

specify occupational awareness objectives with pre and post-testing on these objectives to assess change. Such an approach would help to rule out the possibility that change in awareness is due to learning history outside of school. The existence of this effect is indicated by data which shows that the mean of occupational awareness scores increases across grade levels, one to four, while the number of occupations teachers mentioned and/or studied decreases across grade levels one to four. While the basic advantage of this approach is that it can demonstrate the effects of a school curriculum, it also assures that tests will have content validity and be able to assess those unique aspects of the T4C curriculum.

The second question posed about the effects of T4C activities on enjoyment and memorable experiences perhaps provides some insight into the area of valuing in the affective domain. Apparently, Project-supported activities have provided experiences that are remembered and valued positively. On the other hand, the meaning of these experiences has not been established in the sense of concurrent or predictive validity. A point biserial correlation using a random sample of 62 students in four fourth grade classrooms revealed no significant relationship ($r_{pb} = .15, p > .05$) between occupational awareness score and Project-related or non-related activities which were

enjoyed. This relationship suggests that if T4C is to be viewed as a motivational device, then a summative evaluation approach might be used at the higher levels of the affective domain assessing students' attitudes towards school, self, and academic subjects, as well as achievement in various subject matter areas.

PART II. MIDDLE SCHOOL - Grade 5

Purpose: Evaluation at the middle school level has sought to investigate the effects of an occupational curriculum on both the cognitive and affective domains. More specifically, the evaluation has sought to answer the following questions related to the Project's goals:

1). Has an occupational education curriculum contributed to an increased knowledge and awareness of occupations?

2). Has an occupational education curriculum contributed to an increased level of vocational maturity, self-concept, and favorable attitudes toward school?

Procedures - Occupational Knowledge and Awareness

1. Tests and Test Development - Two tests were developed to assess occupational knowledge and awareness. The first was a collection of fifty items combined from the six forms of the Occupational Cognizance Test developed for the fourth grade level (ED 037571). These tests included occupational information and educational-level needs for various occupations. The second test was developed by the Project staff and was meant to serve a criterion-referenced function in that it tested basic factual information that teachers would be teaching in a unit on the con-

struction and building trades. Copies of both tests are included in Appendix A.

2. Vocational Maturity, Self-Concept, and Attitudes Towards School - Vocational Maturity was assessed using Crites' Vocational Development Inventory (1966). This instrument seeks to assess personal involvement in selecting a vocation, independence in vocational decision-making, and orientation to the world of work as indicators of vocational development. A single composite Vocational Maturity score is obtained for each individual.

The tests of Self-Concept and Attitudes Towards Schools were those developed by the Instructional Objectives Exchange for the intermediate level. Two of these scales were used to assess Self-Concept (Family and Peer) and six were used to assess Attitudes Toward School (Mode of Instruction, Authority and Control, Teacher-Pupil Relationships, Learning, School Social Structure and Climate, and Peer Relationships). These eight scales were combined to form an eighty-item instrument; a total score for each scale was obtained by summing only those responses indicating positive attitudes as recommended by the I.O.X.

3. Sample - Only one classroom group (N=36), chosen by Team B teachers at the fifth grade level, received the curriculum and, consequently, only

this group received the tests described above in both pre and post instructional conditions. Pre-tests were administered in January and post-tests were administered in the last two weeks of May. As indicated by the degrees of freedom in Table IV of the results, not all students completed all the tests.

4. Design and Analysis - The design of the evaluation was the simple pre-test, post-test design without a control group. Differences on pre-test, post-test means were analyzed with the t-test for correlated data.

Limitations

The primary limitation of this evaluation was the lack of a randomly assigned control group. Such randomization would permit inferences concerning the effects of the curriculum on students; however, no such inferences are possible despite the significance of obtained results since in this design, history, maturation, effects of testing, etc. are plausible rival hypotheses in explaining change.

Results

Table IV contains the results of the t-tests on pre and post-test means. In the cognitive area, the difference between the means of the Occupations Test showed a significant increase while the means of the Construction Unit Test were not significantly different. In the affective area,

the means of the V.D.I., Peer Self-Concept, and Family Self-Concept scales were not significantly different. The means of the following attitude scales were significantly different in that post-test means were lower than pre-test means: Learning, Teacher-Pupil Relationships, School Social Structure and Climate, Authority and Control, Mode of Instruction, and Peer Relationships.

TABLE IV

RESULTS OF t-TESTS ON PRE AND POST TEST MEANS
GRADE 5

Test	Means		df	t
	Pre	Post		
1. Occupations Test	31.75	34.94	31	5.812*
2. Construction Unit	11.89	12.18	32	0.586
3. V.D.I.	26.26	25.83	34	0.495
4. Peer Self-Concept	4.32	4.38	33	0.403
5. Family	5.09	5.09	33	0.000
6. Learning	3.21	2.74	33	1.932*
7. Teacher-Pupil Relationships	5.26	4.32	33	2.788*
8. School Structure & Social Climate	10.71	9.24	33	3.094*
9. Authority & Control	8.56	6.76	33	3.92 *
10. Mode of Instruction	8.74	7.62	33	1.86 *
11. Peer Relationships	7.41	6.85	33	1.89 *

*= $p < .05$

Discussion

Several aspects of evaluation discussed in the elementary section are relevant for evaluation in the middle school grades. Perhaps the most important aspect is the use of teacher-made tests in the role of formative evaluation, assessing the learning of those objectives which teachers have formulated and taught. The lack of a significant difference in the Construction Unit test seems to point up the need for this approach if cognitive skills are to be assessed.

In the assessment of self-concept and attitudes, several problems are presented by the IOX scales as presently formulated. The reliability of each scale, estimated by internal consistency procedures, is relatively low. This suggests that if change occurs, the change effects may be spread out among several scales such that change cannot be consistently assessed. Consequently, factor analysis will be performed on this data to determine the underlying structural relationships of these items. In the event that the factor analysis produces a structure different from that proposed by the IOX, these results would dictate the realignment of those items which are summed to produce scale-scores. The internal consistency and reliability of the scales should be increased by these procedures.

REFERENCES

Bloom, B.S., Krathwohl, D.R. & Masia, B.B. Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook 2. Affective domain. New York: McKay, 1964.

DELAWARE'S OCCUPATIONAL - VOCATIONAL MODEL

What Work Do People Do?

What Do They Work With, Where Do They Work?

Introduction to Students:

This test is designed to see if (1st, 2nd, 3rd, 4th) grade students know what work people do, what tools they work with, and where people do their work. Since it is meant to show what (1st, 2nd, 3rd, 4th) graders know about people and their work, you won't receive a grade on the test, but we would like you to do as well as you can in answering the questions.

Directions to Students:

I will read questions about people and their work and you will mark your answers on your answer sheet. Take your answer sheet now. Write your name in the space. Check whether you are a boy or girl. Write your grade in the space provided.

Let me show you how to mark your answer sheet. If I read a question and the answer is "yes", circle "yes" next to the question number. If I read a question and the answer is "no", circle "no" next to the question number.

Let's try an example: Does a policeman deliver letters? Circle "yes" or "no". The correct answer is "no", so you should have circled "no". Any questions? If you would like to have a question repeated, raise your hand. Do not ask anybody to tell you a question or an answer while the test is going on. Let's begin.

DELAWARE'S OCCUPATIONAL - VOCATIONAL MODEL

People, Tools, and Their Environments

1. Does a secretary usually use a typewriter in her work?
2. Does a salesclerk use a wrench in his work?
3. Does a broadcaster work in a gas station?
4. Does a carpenter use a hammer?
5. Does an assemblyline worker work in a factory?
6. Does a truck driver use a camera for his work?
7. Does a farm manager work on a farm?
8. Does a fisherman do his work with an ax?
9. Does an air pollution technician look at smokestacks in his work?
10. Does a lawyer work in a church?
11. Does a doctor do his work with a telescope?
12. Does an innkeeper do his work in a motel?
13. Does a barber do his work with clippers?
14. Does a musician do his work with a saw?
15. Does a mother do her work in a house?
16. Does a deliveryman work in an office?
17. Does a station attendant work with a gas pump?
18. Does a reporter work in a warehouse?
19. Does an architect work with road maps?
20. Does a draftsman use an airplane for his work?

People, Tools, and Their Environments

21. Does a pilot work with blue prints?

22. Does a ranger work in a forest?

23. Does a marine biologist work with ocean life?

24. Does a custodian work in a school?

25. Does a mailman work with a firetruck?

26. Does a nurse work on a stage?

27. Does a lifeguard work with a swimming pool?

28. Does a dry cleaner clean house?

29. Does a writer work on books?

30. Does a veternarian work with animals?

INTERVIEW FORMAT - GRADES I AND II

Int: Hello, my name is _____ _____. What's your name?
S: Response

Int: I am going to ask you two questions about what you've been doing in school this year. This is a tape-recorder and I'm going to record what we say so that I can remember what we say. OK?

Int: Here's the first question. Think about it before you answer. What did you do in school this year that you really liked to do? Something that was fun and that you enjoyed.
S: Response

Int: O.K., good. Here's my next question. Think about it before you answer. What did you do in school this year that you really didn't like to do? Something that wasn't fun and that you didn't enjoy.
S: Response

Int: These are the questions I wanted to ask you. Thank you for talking to me. It seems like you've had a good year this year. Please return to your desk and ask the two people next to you to come in next.

DIRECTIONS:

Place your name and class on the answer sheet.

For each of the following questions, fill in the number of the correct answer on your answer sheet.

If you have trouble reading a word, ask your teacher for help.

1. Which of the following does NOT require special schooling:

   1. cab driver
   2. nurse
   3. computer programmer
   4. barber

2. Which of the following requires the LEAST training:

   1. hair stylist
   2. secretary
   3. pilot
   4. mailman

3. A college education is NOT required to be a

   1. chemist
   2. doctor
   3. carpenter
   4. architect

4. Which of the following works closest with a STEWARDESS:

   1. travel agent
   2. author
   3. photographer
   4. pilot

5. Which of the following is NOT in the field of CONSTRUCTION:'

   1. architect
   2. mechanic
   3. carpenter
   4. surveyor

6. Which of the following works mainly with AUTOMOBILES:

   1. carpenter
   2. pilot
   3. chemist
   4. mechanic

7. Which of the following has to know the MOST about mathematics:

   1. lawyer
   2. pilot
   3. doctor
   4. secretary

8. Which of the following spends the MOST time serving food:

1. stewardess
2. waitress
3. cook
4. nurse

9. Which of the following is in the field of CONSTRUCTION:

1. doctor
2. soldier
3. carpenter
4. saleslady

10. Which of the following requires the LEAST training:

1. athlete
2. policeman
3. mechanic
4. milkman

11. A college education is usually needed to be a:

1. mailman
2. lawyer
3. mechanic
4. farmer

12. Which of the following is NOT in the field of EDUCATION:

1. teacher
2. lawyer
3. counselor
4. principal

13. Which of the following works MOST with groups of people:

1. mailman
2. secretary
3. teacher
4. chemist

14. Which of the following does NOT require special schooling:

1. cab driver
2. nurse
3. computer programmer
4. barber

15. Which of the following is in the field of ENTERTAINMENT:

1. policeman
2. mailman
3. actor
4. barber

16. Which of the following works closest with a PILOT:

1. architect
2. mechanic
3. surveyor
4. accountant

17. Which of the following has to know the MOST about grammar:

1. secretary
2. mechanic
3. surveyor
4. engineer

19. Which of the following requires the LEAST education:

1. chemist
2. teacher
3. lawyer
4. saleslady

19. Which of the following is NOT in the field of GOVERNMENT SERVICE:

1. politician
2. musician
3. mailman
4. policeman

20. Which of the following is NOT in the field of ART:

1. illustrator
2. typist
3. designer
4. sculptor

21. Which of the following works closest with a GEOLOGIST:

1. landscaper
2. teacher
3. surveyor
4. doctor

22. Which of the following works closest with an AUTHOR:

1. teacher
2. mailman
3. librarian
4. editor

23. Which of the following is in the field of COMMUNICATION:

1. cook
2. telephone operator
3. athlete
4. mechanic

24. It is usually necessary to serve as an apprentice to become a:

1. waitress
2. biologist
3. plumber
4. salesman

25. Which of the following designs buildings:

1. mechanic
2. architect
3. surveyor
4. engineer

26. Which of the following does NOT have to work with tools:

1. mechanic
2. carpenter
3. milkman
4. barber

27. Which of the following requires the LEAST training:

1. astronaut
2. telephone operator
3. doctor
4. hair stylist

28. Which of the following works closest with a VETERINARIAN:

1. soldier
2. farmer
3. mechanic
4. author

29. Which of the following is NOT in the field of TRANSPORTATION:

1. stewardess
2. mechanic
3. truck driver
4. architect

30. Which of the following requires the MOST education:

1. barber
2. mechanic
3. secretary
4. chemist

31. Which of the following works closest with a CASHIER:

1. librarian
2. bookkeeper
3. nurse
4. actress

32. Army officers usually have at least:

1. a high school diploma
2. two years of high school
3. a college degree
4. a grade school education

33. Which of the following works mainly with ANIMALS:

1. farmer
2. veterinarian
3. doctor
4. milkman

34. Which of the following works closest with an EDITOR:

1. lawyer
2. doctor
3. publisher
4. surveyor

35. A college education is NOT required to be a:

1. nurse
2. secretary
3. teacher
4. librarian

36. Which of the following is in the field of AGRICULTURE:

1. hair stylist
2. housewife
3. carpenter
4. farmer

37. Which of the following has to know the LEAST about MATHEMATICS:

1. pilot
2. teacher
3. mailman
4. store clerk

38. Which of the following spends most of his time with tax records:

1. surveyor
2. biologist
3. architect
4. accountant

39. Which of the following works closest with an ARCHITECT:

1. mechanic
2. contractor
3. nurse
4. librarian

40. Which of the following requires the MOST training:

1. printer
2. sales clerk
3. waitress
4. telephone operator

41. Which of the following works closest with a CARPENTER:

1. mechanic
2. chemist
3. plumber
4. gardener

42. Which of the following is in the field of MEDICINE:

1. teacher
2. nurse
3. hair stylist
4. barber

43. Which of the following is in the field of TRANSPORTATION:

1. barber
2. farmer
3. actress
4. pilot

44. Which of the following spends spends the MOST time at a desk:

1. actress
2. secretary
3. carpenter
4. policeman

45. Which of the following works closest with a POLICEMAN:

1. teacher
2. pilot
3. chemist
4. lawyer

46. Which of the following spends the LEAST amount of time outdoors:

1. athlete
2. farmer
3. mailman
4. teacher

47. It is usually necessary to serve as an INTERN to become a:

1. mechanic
2. lawyer
3. doctor
4. policeman

48. Which of the following works in a laboratory:

1. secretary
2. chemist
3. lawyer
4. barber

49. Which of the following is in the field of SCIENCE:

1. chemist
2. soldier
3. lawyer
4. farmer

50. Which of the following is NOT in the field of MEDICINE:

1. nurse
2. barber
3. veterinarian
4. pharmacist

CONSTRUCTION UNIT TEST

PICK THE NUMBER OF THE CORRECT ANSWER AND PLACE IT ON YOUR ANSWER SHEET. DO NOT WRITE ON THIS TEST. IF YOU CANNOT READ A WORD, ASK YOUR TEACHER.

1. Which tool would an architect use?
   1. brush
   2. hammer
   3. square
   4. awl

2. Which item would an architect produce?
   1. wage rate
   2. rivet
   3. miter joint
   4. blue print

3. Which tool would a draftsman use?
   1. template
   2. tin snips
   3. level
   4. trowel

4. Which item would a draftsman produce?
   1. ceramic tile
   2. floor plan
   3. circuit breaker
   4. furring strip

5. Which tool would a surveyor use?
   1. rasp
   2. pliers
   3. transit
   4. auger bit

6. Which item would a general contractor need to finish his work?
   1. down spout
   2. watt-hour
   3. trap
   4. bill of materials

7. Which tool would an excavator use?
   1. screw driver
   2. bulldozer
   3. chisel
   4. pliers

8. Which item would an excavator need to accomplish his work?
   1. duct work
   2. miter joint
   3. plot-plan
   4. vapor barrier

9. Which tool would a mason use?
   1. clamp
   2. trowel
   3. file
   4. try-square

10. Which item would a mason need to finish his work?
    1. joist
    2. rivet
    3. glue
    4. mortar

11. Which tool would a carpenter use?
    1. framing square
    2. tin snips
    3. brush
    4. transit

12. Which item would a carpenter need to finish his work?
    1. concrete
    2. brick
    3. lumber
    4. asbestos

13. Which tool would an electrician use?
    1. trowel
    2. architect's scale
    3. diagonal cutter
    4. level

14. Which tool would a plumber use?
    1. trowel
    2. pipe wrench
    3. tin snips
    4. try-square

15. Which item would a plumber repair in his work?
    1. circuit breakers
    2. ceiling
    3. miter joint
    4. trap

16. Which tool would a painter use?
    1. framing square
    2. brace & bit
    3. roller
    4. key-hole saw

17. Which item would a painter need to know about in his work?
    1. enamel
    2. shingle
    3. ceramic tile
    4. sheet metal

18. What tool would a tile installer use?
    1. rasp
    2. tape rule
    3. clamp
    4. awl

19. Which tool would a roofer use?
    1. auger bit
    2. chisel
    3. screw driver
    4. claw hammer

20. Which item would a roofer need to finish his work?
    1. felt paper
    2. bench mark
    3. circuit breaker
    4. rivet

21. Which item would a laborer need to know about in his work?
    1. building codes
    2. zoning
    3. working conditions
    4. estimates

22. Which item would a heating installer need to know about in his work?
    1. tin snips
    2. trowel
    3. architect's scale
    4. transit

23. Which item would a heating installer need to know about in his work?
    1. bench mark
    2. duct work
    3. branch circuit
    4. drain field

24. Which tool would a dry wall installer use?
    1. crosscut saw
    2. diagonal cutter
    3. level
    4. folding rule

25. Which item would a dry wall installer need to know about to finish his work?
    1. plot-plan
    2. furring strip
    3. trap
    4. vent pipe

26. Which item would a landscaper need to know about to finish his work?
    1. grading
    2. scaffold
    3. fuse box
    4. joist

27. Which item would a building inspector need to know to finish his work?
    1. working conditions
    2. wage rate
    3. building codes
    4. fringe benefits

OPINION SURVEY

This survey is designed to let you express your attitudes about yourself and your school. There are no right or wrong answers, so respond to each item as honestly as you can.

DIRECTIONS

On your answer sheet mark the following:

1. Your name
2. Whether you are a boy or a girl
3. Your grade level (5, 6, 7, or 8)

On your answer sheet, please show whether each sentence is generally true or untrue for you by marking "true" if the sentence is generally true or "untrue" if the sentence is generally not true. Make a mark for every sentence.

For example:

	True	Untrue	
1.	____	x	1. My class is too easy.
2.	x	____	2. I'd like to stay at my school always.

1. Other students bother me when I'm trying to do my school work.

2. My teachers always tell me when they are pleased with my work.

3. My teachers are interested in the things I do outside of school.

4. I can disagree with my family.

5. This school is like a jail.

6. In our classes, we often get a chance to make decisions together.

7. I often feel rushed and nervous in school.

8. My teachers give me work that is too hard.

9. Other students often get me into trouble at school.

10. My teachers seldom tell me whether my work is good or bad.

11. My teachers listen to what I have to say.

12. My family thinks I don't act as I should.

13. I follow the rules at school.

14. There are many different activities at school from which I can choose what I would like to do.

15. When I do something wrong at school, I know I will get a second chance.

16. My teachers give me work that is too easy.

17. I often must do what my friends want me to do.

18. My teachers try to make school interesting to me.

19. My family is glad when I do things with them.

20. My teachers do not care about me.

21. My family respects my ideas.

22. The principal of my school is friendly toward the students.

23. I get as many chances as other students to do special jobs in my classroom.

24. My teachers do not give me enough time to finish my work.

25. The other students in my classes are not friendly toward me.

26. Friends usually follow my ideas.

27. I like to do school work at home in the evenings.

28. My teachers don't understand me.

29. I usually treat my family as well as I should.

30. The principal's main job is to punish students.

31. My teachers treat me fairly.

32. My teachers make sure I always understand what they want me to do.

33. I really like working with the other students in my classes.

34. I would rather learn a new game than play one I already know.

35. I'm afraid to tell my teachers when I don't understand something.

36. My family often expects too much of me.

37. I get scared when I have to go to the office at school.

38. My teachers unfairly punish the whole class.

39. I get tired of hearing my teachers talk all the time.

40. School is a good place for making friends.

41. I wish my class could have the same teachers next year.

42. I like trying to work difficult puzzles.

43. My teachers scare me.

44. I am an important person to my family.

45. When I have a problem on the playground at recess, I know I can find a nice teacher to help me.

46. I don't like most of the children in my classes.

47. My teachers are not very friendly with the students.

48. The biggest reason I come to school is to learn.

49. My teachers are mean.

50. I am embarrassed to be in the classes I'm in.

51. I am lonely very often.

52. I think a new student could make friends easily in my class.

53. I feel like my teachers don't like me when I do something wrong.

54. There are too many students in my classes.

55. When a new student comes into our class, my friends and I try very hard to make him or her feel happy.

56. My teachers like some students better than others.

57. I feel unhappy if I don't learn something new in school each day.

58. When I do something wrong, my teachers correct me without hurting my feelings.

59. Most people have fewer friends than I do.

60. I have to share books with other students too often at school.

61. I know what my teachers expect of me.

62. My teachers are often too busy to help me when I need help.

63. I am easy to like.

64. My teachers do not scare the students.

65. I often feel lost at school.

66. My teachers usually explain things too slowly.

67. There's no privacy at school.

68. Older students often boss my friends and me around at my school.

69. At school other people really care about me.

70. I would rather get books for my birthday than toys or clothes.

71. I would rather eat lunch at home than at school.

72. My teachers boss the students around.

73. The students in my classes nearly always obey the teacher.

74. We change from one subject to another too often in my classes.

75. I like my teachers.

76. I am popular with people my age.

77. My teachers grade me fairly.

78. I am friendly toward other people.

79. In school I have to remember too many facts.

80. I am fun to be with.